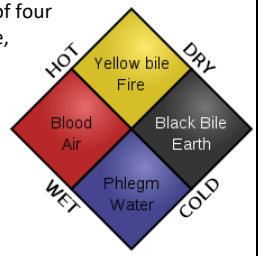
Medieval England 1250-1500

Causes of illnesses

Religious: God caused illness due to committing sin or testing faith
Witches: Disease was caused by witches cursing people. Old women who lived alone often accused of witchcraft
Astrology: alignment of the planets could make you ill
Miasma: bad smells caused disease
4 Humours theory: Body made up of four liquids (blood, yellow bile, black bile, phlegm). Had to be balanced to be healthy *(Hippocrates)*



Progress? Religion slowed progress- no one wanted to disagree with the Church
-Church discouraged human dissection
-Monks and Priests were some of the few people that could read and write (controlled what people believed)

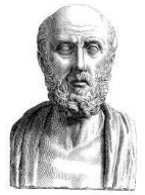
Treatment

Praying/flagellation/pilgrimage: so that God would not punish you
Purging: making yourself throw up/go to the toilet to balance humours
Bloodletting: using leeches or cuts to remove blood to balance humours
Theory of opposites: balance humours through making yourself warm/cold etc.
Herbal Remedies: drink/sniff/bathe in e.g. aloe vera, camomile
Astrology: position of the planets at time of birth and illness depended on when you received treatment e.g. collected herbs

<u>Care for the sick</u>
1. Physician- Diagnosed illness by looking at blood, urine and studying urine charts
2. Apothecary- mixed herbal remedies
3. Barber-surgeon- performed small surgeries e.g. amputation, bloodletting
4. Care in the home- majority of sick cared by a woman at home
5. Hospitals -Often run by Church: believed only God could make you better, very clean, patients given food and rest, people with incurable illnesses turned away

Individuals

Hippocrates:
-Ancient Greek
-4 humours theory
-Started the idea of observing patients
-Hippocratic oath (doctors should respect life)



Galen:
-Theory of opposites: you can balance the humours by giving patients opposite of symptoms e.g. too much phlegm meant you were cold so should eat peppers
-Dissected on animals such as pigs (which meant there were mistakes in his findings)
-Church supported his ideas (fit in with Christian teachings)

Prevention

Religious: praying, flagellation (whipping yourself so God does not make you ill), going on pilgrimage, not sinning
Good hygiene: cleanliness seen as next to Godliness, stopped miasma- people tried to regularly bath
Regimen Sanitatis- loose set of instructions by Physicians to maintain a good health e.g. exercise, diet, keeping clean
Diet: humours believed to be linked to digestion, people purged as a way of preventing humours becoming unbalanced
Purifying the air: smelling herbs, cleaning smelly toilets

Key Words

Diagnosis: Identify illness based on symptoms.
Physician: Medically trained at University, expensive
Rational: idea based on logic
Supernatural: ideas not explained by science/nature
Pilgrimage: journey to sacred place
Quarantine: Separating sick to stop spread of disease.
Purging: making the patient vomit or go the toilet
Flagellation: whipping yourself

Case Study: Black Death (1348)

Bubonic Plague: actual cause bacteria on fleas on rats
Symptoms: buboes, chills, fever, headache, vomiting, spasms
Beliefs of the causes: God, four humours, miasma, witches, strangers, position of planets
Prevention: praying, flagellation, attempt to clean streets, smelling herbs, some attempt at quarantine however was not enforced
Treatment: praying, bleeding, purging, cutting open buboes (lancing), herbal remedies

Renaissance England 1500-1700

Causes of illnesses

Continuities: miasma theory (especially popular in plague times)

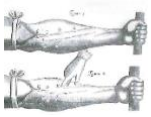
Changes: new rational ideas were developing
-People were *still* religious but began to look for new explanations of disease
-Astrology less popular
-Most physicians now believed 4 humours didn't cause disease (although some ordinary people did)
-Human dissection was now allowed *(Andreas Vesalius)*
-Thomas Sydenham's observations meant more physicians were now observing patients

Treatment

Continuities: praying, purging/bleeding (although there was less of these), smelling herbs
Changes: transference (illness could be transferred to something else), new chemical cures (metals), new herbal remedies from other countries
-Wars over Europe meant advances in treatment e.g. new mixtures for wounds and sewing up arteries *(Ambroise Pare)*
-Discovery that blood circulated around the body *(William Harvey)*
<u>Care for the sick:</u>
-1536 Henry VIII dissolution of the monasteries (hospitals closed)
-When they reopened, less focus on God, more on actual treatment
-More training for medical professionals, licenses required
-Pest houses: specialised in treating one illness e.g. plague
-Still care in the home

Individuals

William Harvey: dissected on lizards, discovered blood circulated round the body, disproved Galen's ideas that it was created in the liver
Thomas Sydenham: 'English Hippocrates', didn't rely on just medical books but also observed patients and recorded findings



Andreas Vesalius: Carried out dissections on humans including criminals. Improved understanding of human body and corrected mistakes made by Galen on anatomy e.g. human lower jaw was one part, not two
Ambroise Pare: ran out of burning oil to treat wounds so used new mixture of egg white, turpentine and rose oil. Sewed up arteries
Lady Grace Mildmay: cared for her community, mixed herbs but was prosecuted for practising medicine without a license

Prevention

Continuities:	**Changes:**
1. Cleanliness still important	1. …but bathing less common since syphilis outbreak
2. Removing bad air	2. …increase in removing bad air
3. Praying, pilgrimage, Regimen Sanitatis	3. …but people also began thinking about new ways to prevent disease

Key Words

Renaissance: 'rebirth' new rational ideas developing
Transference: Belief that an illness can be transferred to something else

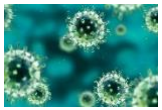
<u>Transmission of ideas:</u>
Printing Press: machine for printing text/pictures, took control away from the Church
Royal Society: set up 1660, scientists could share and develop work. Sponsored scientists. Royal Charter by King Charles II

Case Study: Great Plague (1665)

1665- bubonic plague returned again
Beliefs of the causes: similar beliefs as 1348 e.g. God, MORE people believed it was miasma, LESS thought it was the 4 humours and people now worked out that it passed from person to person
Prevention: praying, local governments ordered by King to try to stop the spread e.g. carts collected dead, theatres closed, burned tar, quarantined infected people in their house with a red cross over the door
Treatment: prayer, Plague doctors and herbal remedies, chicken rubbed on buboes (transference)

Industrial Britain 1700-1900

Causes of illnesses



Continuities: miasma theory, influence of Church during epidemics (disease that spreads quickly)

Changes:
-Astrology, 4 humours, witches pretty much gone
-Spontaneous Generation Theory (microbes were released when things decay)
-Replaced by Germ Theory 1861: germs cause disease *(Louis Pasteur)*
-Microscopes developed that allowed people to see microbes
-Began to be able to identify different microbes that caused different disease *(Robert Koch)*

Treatment

Period of great change, but took a while for new ideas to spread, meant old herbal remedies remained popular
Anaesthetics: Chloroform was now used to knock patients out (safer but was hard to work out dosage). Replaced laughing gas and ether *(James Simpson)*
Antiseptic: Carbolic acid used to clean wounds (stop flesh rotting) and equipment *(Joseph Lister)*
Hosptials:
-Florence Nightingale and other reformers helped to improve conditions in hospitals
-Cleanlines improved, more organised, better training for nurses, nurses given a bigger role
-Speicalist hopsitals set up e.g. mental aslyum

Individuals

Louis Pasteur: Discovered that germs caused disease 1861
Robert Koch: Discovered 21 specific microbes that caused disease e.g. TB in 1882, Cholera 1883
Edwin Chadwick: Created the Chadwick Report
Edward Jenner: 1796 discovered vaccination for smallpox using cowpox, vaccination made compulsory by 1853
James Simpson: Discovered Chloroform as an anaesthetic 1847.
Joseph Lister: Used carbolic acid as an antiseptic 1865
Florence Nightingale: improved conditions in hospitals and set up training school for nurses
John Snow: Discovered Cholera was caused by dirty drinking water 1848
Joseph Bazalgette: Created sewer system, built 1300 sewers in London, took until 1875 to be completed

Prevention

1796: Vaccination for smallpox from cowpox replaces innoculation *(Edward Jenner)*
1842: Chadwick Report- people in towns had lower life expectancies due to poor conditions *(Edwin Chadwick)*
1848: 1st Public Health Act- encouraged cities to clean up – not compulsory, no real change
1853: Vaccinations compulsory
1858: Great Stink- Thames smelt, resulted in the creation of sewer system *(Joseph Bazalgette)*
1875: 2nd Public Health Act- compulsory, forced authoriteis to provide clean water, dispose of sewage etc.
1900s: operating theatres/wards cleaned using aseptic technqiues

Key Words

Anaesthetics: used to make someone unconcious for surgery
Antiseptic surgery: killing bacteria before an operation
Aseptic surgery: operation that takes place in a controlled germ free environment
Inoculation: Injecting a patient with a mild version of the disease in order to make them immune to it
Vaccination: Injecting a patient with a mild version of a different disease to prevent them getting a worse disease
Great Stink: open sewage on the River Thames created horrible smell, Parliament had to move
Microbes: living organisms that can onlu be seen under a microscope
Laissez-faire: governement attitude that it should not interfere with public health 'let it be' (changed when working men got the vote)

Case Study: Cholera 1854

Symptoms: severe diarrhoea and vomiting
Actual cause: contaminated water
Beliefs of the causes: miasma
Prevention: government tried to prevent it by cleaning streets to reduce miasma

John Snow:
1. Observed cholera epidemic 1848-49 and theorised it was due to dirty drinking water
2. 1854 outbreak, mapped deaths and linked them to the Broad Street Pump
3. Removed handle from pump meaning the number of deaths fell
Impact: Initially many did not believe him due to no scientific evidence however in the long term it helped to contribute to the sewer system and the 2nd Public Health Act

Modern Britain 1900-present

Causes of illnesses

By 1900s there was a solid understanding of germs and how they caused disease. However scientists relaised that not all disease were caused by microbes:

Hereditary diseases: Discovery of DNA 1953 *(Watson and Crick)* and the Human Genome Project (1990) meant scientists understood some diseases were hereditary e.g. Down's Syndrome
Lifestyle Factors: smoking, drinking, diet etc. can cause disease
Improvements in diagnosis: X-rays, MRI/CT scans, ultrasounds, blood pressure monitoring, labratories to test blood/skin

Treatment

1909: Magic Bullets- chemical that kills one specific bacteria in the body. 606th Salvarsan test found magic bullet to treat syphillis *(Paul Ehrlich)*
Antibiotics: Penicillin- discovered to kill bacteria in a petri dish 1928 *(Alexander Fleming)*
-1940 research continued on mice and patient- patient died due to not enough funding *(Florey and Chain)*
-1941 US enters war, gives funding

Hospitals
-1948 NHS set up *(Aneurin Bevan)* Free health care funded by taxes
-Hospitals, dentists, amublances, GPs, care for elderly/pregnant
-High tech medical treatment such as chemotherapy, pacemakers, organ transplants, keyhole surgery

Individuals

Watson and Crick: Discovered DNA 1953.
-Meant scientists could explore causes of hereditary diseases but doctors still unable to treat them
Paul Erhlich: First Magic Bullet 1909
-Discovered Salvarsan 606 to treat syphilis, but could only treat one specific disease
Alexander Fleming: Discovered Penicillin 1928
-Noticed mould killed bacteria in a dirty petri dish, but didn't have the funding to carry on research
Florey and Chain: mass produced penicillin after 1941
-Given funding from US government to fund research
-Penicillin mass produced, enough to treat Allied casualties on D-Day
Aneurin Bevan: Set up National Health Service 1948

Prevention

Compulsory Vaccinations: Free, compulsory vaacinations from the governemnt e.g. for MMR, tetnus. However some opposition
Lifestyle Campaigns: television/poster/newspaper campaigns to encourage people to lead healthier lifestyles e.g. Change4life, Stoptober
Laws to prevent illness: no smoking in work places, food inspections, clean air acts

Key Words

DNA- carries genetic information about a living thing
Human Genome Project- scientists worked to map every gene in human DNA
Hereditary disease: disease that is passed down from one generation to the next
Anitobiotic: medcine that detroys the growth of bacteria in the body
D-Day: Allied forces in WWII invade Northern France

Case Study: Fight against Lung Cancer

Diagnosis: difficult to diagnose early on, symptoms include persistent cough, coughing up blood, breathlessness
Cause: mutation of cells, increased risk from smoking
Prevention: government tried to reduce people smoking e.g. raising age from 16-18, banning smoking in certain places, stop smoking campaigns
Treatment: surgery to remove tumour, lung transplant, chemotherapy, radiotherapy

Historic Environment: The Western Front

1914-1918

Key events of WWI

-4th Aug 1914: Britain declared war on Germany, sent troops to Northern France to stop German advances

-1st Battle of Ypres Oct-Nov 1914: British held onto Ypres in Belgium, stopped Germans controlling port Calais (meant Allied reinforcements could come over by sea) but well defended trenches on both sides meant little movement

-2nd Battle of Ypres Apr-May 1915: A German attack using chlorine gas for the first time in the war failed to capture Ypres. 60,000 Allied casulties, 35,000 German casulties

-Battle of Somme Jul-Nov 1916: 1st day of battle 60,000 Allied casulties (20,000 of which died), total 400,000 Allied casulites= pressure on medical services on Western Front. First use of tanks.

-Battle of Arras Apr-May 1917: Allied soldiers dug tunnels under Arras for shelter/movement of troops (including underground hospital), tunnels used to launch battle (high casulties)

-3rd Battle of Ypres Jul-Nov 1917: British made small gains at Ypres, German defences were strong, ground was waterlogged-soldiers drowned

-Battle of Cambrai Nov-Dec 1917: first large scale British use of tanks- Germans did regain a little ground afterwards.

-Allied army eventaully pushed back Germans, Germany surrendered 11 November 1918

Helping the wounded on the Western Front

RAMC: royal army medical corps, branch of the army responsible for medical care

FANY: First Aid Nurses Yeomanry, female volunteers to provide support e.g. driving ambulances, cleaning

Undergound hospital at Arras: close to the front line, tunnels beneath Arras, space for 700 beds, running water, electricity

Stages of treatment (chain of evacuation)

Regimental Aid Post (RAP): within 200m of front line, give immediate first aid (could not deal with serious injuries)

↓

Dressing station: about a mile back, dugouts, tents, stopped wounds becoming infected, could look after men for a week

↓

Casualty Clearing Stations (CCS): larger, better equipped, further back, staffed by doctors/nurses who prioritised treating life-threatening injuries to men who had a chance

↓

Base Hospitals: situated near ports on the coast, doctors, nurses, surgeons, best care on the front line, patients could stay for some time until being shipped home or sent back to the front line

Trench System

Creation of Trenches: dug by troops often using exisiting ditches to make it easier. Constanly maintained and improved. Dug in a zig zag

Terrain: bumpy, waterlogged, mud, craters/holes from explosions across no mans land. Difficult to move around and carry wounded on stretchers (hard to go round corners and over rough terrain)

Features of trench system:

-Didn't spend months in one place, men were rotated from the front line to reserve and support trenches

-**Front line**: firing line nearest enemy where attacks were launched

-**Support trenches**: where troops would retreat from the front line

- **Reserve trenches**: Troops could be positioned for counterattack

-**Communication trenches**: connected trenches, soldiers could pass messages

-**Dug outs**: holes in the side of the trench for soldiers to take cover

-**No man's land**: land in between enemy trenches

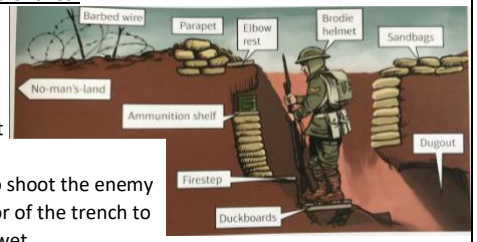
Features of individual trenches:

-Barbed wire to halt enemy advances across no mans land

-Parapet: bank of earth and sandbags to protect front of the trench

-Fire step to stand on to shoot the enemy

-Duckboards on the floor of the trench to try to stop feet getting wet

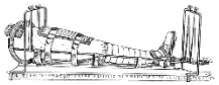


Medical Advances and the Western Front

Mobile x-rays: Jan 1915 only 2 mobile x-ray units. By 1916 most CCS and base hospitals had x-rays and there were more mobile x-ray units close to the front. Allowed shrapnel to be located quicker which prevented deaths

Blood Transfusions: initial issues with blood storage. 1915 Richard Levisohn- adding sodium citrate stopped clotting for short amount of time, Later discoveries that blood could be refrigerated, and that adding citrate glucose increased storage time. Preparation for Battle of Cambrai 1917- 22 units of blood stored in 1st 'blood depot' by Oswald Hope Robertson

Thomas Splint: used to help fractured leg bones heal, kept leg rigid which reduced blood loss which reduced the death rate of broken limbs to fewer than 20%



New techniques for infections: antiseptic/aseptic surgery not possible in dressing stations and CCS. 1917- sterilised salt solution used, but didn't work when infections were deep in body so surgery developed to remove infected tissue as well as all traces of shrapnel

Advances in surgery: Number of brain injuries during the war led to new surgical techniques. Plastic surgery also improved led by Harold Gillies.

Key Words

Trenches: Long, narrow ditches dug during WWI

Ypres Salient: area around Ypres where many battles took place during WWI

No Man's Land: land between German and Allied trenches during WWI

Shrapnel: fragments/pieces of metal caused by exploding shells

Gangrene: when a body decomposes (rots away) due to loss of a blood supply

Blood Transfusion: blood taken from a healthy person and given to another person

Triage: a system of splitting the wounded into groups according to who needed the most urgent attention

X-ray: used to identify broken bones and if there were pieces of shrapnel/bullets inside soldiers

Injuries and Illnesses on the Western Front

Illness	Cause	Symptoms	Treatment/ Prevention
Trench Foot	**Standing in mud/water**	**Painful swelling on the feet, gangrene**	**Rubbing whale oil on feet, amputation, spare socks, duckboards**
Trench Fever	**Lice**	**Flu like syptoms- high temperature, heachade, aches**	**Delousing stations set up 1918- reduced cases**
Shell Shock	**Exposure to gunfire/ shells**	**Headahces, nightmares, shaking, loss of speech**	**Condition was not well understood, some accused of cowardice. Some evacuated to British hospitals**

Injuries caused by Weapons used in WWI

Gas attacks- chlorine/mustard: caused blindness, coughing, burns, could cause suffocation and death. July 1915 gas masks given to all British troops

Bullet wounds: rifles and machine guns could penetrate organs and fracture bones (machine guns could fire 500 rounds a minute). Bullets had to be located and removed

High-explosive shells and shrapnel: responsible for moving limbs, major internal injuries and most deaths

Head injuries: very common, caused by shrapnel 1915 soldiers had 'Brodie helmets' which reduced head wounds. Extensive head wounds would require brain surgery and/or facial reconstruction

Wound infection: soil on the Western front contained huge amounts of bacteria e.g. gangrene which would enter victims when they were lying on the ground

Blood loss: all weapons could cause soldiers to bleed out. Many of these injuries had rarely been seen before the war.