

Chapter 1 : Ancient Roman medicine: Influences, practice, and learning

In the early years of the Roman Empire, there were no people in what would be a separate medical profession. It was believed that each head of the household knew enough about herbal cures and medicine to treat illnesses in his household.

For the healthy, perhaps it was. But woe unto you if you got sick. Then the shining Roman city showed its dark underbelly. Compassion was not a well-developed virtue among the pagan Romans; mercy was discouraged, as it only helped those too weak to contribute to society. In the cramped, unsanitary warrens of the typical Roman city, under the miserable cycle of plagues and famines, the sick found no public institutions dedicated to their care and little in the way of sympathy or help. Perhaps a family member would come to their aid, but sometimes even close relatives would leave their own to die. The Roman Empire in the first centuries of the church ruled over tens of millions. In its eastern half Rome boasted many ancient metropolises: These became the chief means of spreading Roman civilization, much of which Rome had borrowed from the illustrious Greeks. In the second century B. Once in the cities, however, migrants found themselves living in tenement buildings lacking basic sanitary facilities. The support of family and village now gone, they eked out an often lonely urban existence. Worse still, should they sicken, no clinics or hospitals existed to provide healing or even basic nursing care. True, one could find physicians. But their fees were too steep for most. Some towns did hire a public physician, but institutional health care was unheard of. So hoi polloi commoners were left to rely on folk healers and sellers of herbs, amulets, and quack remedies. Many lacked even the safety net of family—discharged soldiers, peasants who had come into the city seeking work, or slaves who had been recently freed. Without a family, you simply had no support system: Destitute families lacking any resources to help sometimes even abandoned the chronically ill to die. In Rome, sick or elderly slaves were routinely left to waste away on Tiber Island. Unwanted children were often left to die of exposure. Almost without exception defective newborns were exposed in this way. The classical world possessed no religious or philosophical basis for the concept of the divine dignity of human persons, and without such support, the right to live was granted or withheld by family or society almost at a whim. As a result, the chronically ill could be seen everywhere in the streets, baths, and forums—many of them homeless and begging. Some turned to the temples of healing gods, such as Isis and Serapis, who were believed to heal supernaturally. Most famous of these gods was Asclepius, who was worshiped in hundreds of temples and shrines throughout the Roman Empire. The sick would come as pilgrims to the temples. Those who most often sought help were either suffering from chronic or hopeless diseases or were very poor. Some were healed, according to temple inscriptions. By the second century A. But pilgrims came for healing, not for long-term medical care, which was not provided. In fact, the dying were not allowed in the temple precincts, since their death would pollute the sanctuary. A new moral culture By the first century A. The spread was never easy or unimpeded: Nonetheless, by the middle of the second century, Christian churches had sprung up in most major cities and many smaller ones. During this time, in spite of great danger to themselves, these churches carried on an active ministry of philanthropy that included the care of the sick. God loved the human race enough to send Christ in human flesh, to die on a cross for our sins John 3: The weaker and more helpless the neighbor, the greater the need to show them the compassion of Christ. Hence early Christians showed special concern for the protection of unborn and newborn life. This sort of practical morality departed radically from the social ethics of classical paganism and laid the foundation for Christian philanthropy. In Greek and Roman society beneficence providing assistance to the needy existed only on the community level; civic philanthropy was exercised by rulers and the wealthy on behalf of the entire community, rich and poor alike. There was no particular reason to found charitable institutions. The stoic philosophy of many in the ruling class discouraged beneficence motivated by pity because it was based on emotion rather than on reason. Christian beneficence went further than Jewish charity, which required only that the Jewish community help its own. To find a new, broader mandate of care Christians needed to look no further than to the parable of the Good Samaritan, Luke Here Jesus shocked his Jewish hearers when he stated that it was the despised Samaritan who proved himself a

neighbor, having compassion on the wounded man and giving him medical aid when even priests and Levites of his own religious community passed him by. This new ethic also surpassed the Stoic concept of human brotherhood: God loved us while we were sinners: Church leaders encouraged all Christians to visit the sick and help the poor, and each congregation also established an organized ministry of mercy. Presbyters priests and deacons added benevolent ministry to their sacramental roles. They collected alms each Sunday, distributed by deacons. Widows and deaconesses provided a ministry of mercy to women. Despite persecution and their small numbers, Christians maintained an extensive ministry to those in need. By the third century the number of those receiving aid from the hands of the church had grown considerably, especially in large cities. Congregations created additional minor clerical orders, such as subdeacons and acolytes, to assist deacons in benevolence as well as liturgy. In Cornelius, bishop of Rome, wrote to Fabius, bishop of Antioch, reporting that the church in Rome in that year supported 46 priests, 7 deacons, 7 subdeacons, 42 acolytes, and 52 exorcists, readers, and doorkeepers. The church had divided Rome into seven districts, each of which was under the care of a deacon, who was assisted by one subdeacon and six acolytes. Altogether the church in Rome ministered to 1, widows and others in need. It lasted 15 to 20 years, and at one point in Rome 5, people died in one day. Beyond offering supplications to the gods for relief, public officials did nothing to prevent the spread of the disease, treat the sick, or even bury the dead. This is not surprising, since the pagans believed that nothing effective could be done in a time of plague other than appeasing the gods. By the plague swept into Carthage in North Africa. Piles of the dead rotted in the streets, where they had been abandoned by their families. The pagans, casting about for causes, fingered the Christians, and a severe empire-wide persecution erupted. The emperor Decius ordered all Christians to sacrifice to the gods on pain of death. He urged the rich to donate funds and the poor to volunteer their service for relief efforts, making no distinction between believers and pagans. For five years he stood in the breach, organizing relief efforts, until he was forced into exile. The plague of Cyprian, as it has come to be called, marked a new chapter in early Christian medical charity. For the first time, Christians extended their medical care to pagans as well as Christians. To provide even basic care for large numbers of the sick, Cyprian probably hired unemployed men to carry out work that had grown beyond the resources of Christian volunteers. These may have included grave diggers and perhaps an ambulance corps. Much later, in Alexandria, Egypt, in about , the Christian patriarch of that city organized a corps of men recruited from the poor classes to transport and nurse the sick. Already in , during a widespread plague, Christians in many Eastern cities were performing similar tasks. Such large-scale organized emergency efforts did not emerge from nowhere. For centuries Christians had been developing infrastructure in their own churches to help the sick. The diaconal deacon-led care that the churches offered the sick was usually palliative, since it was administered for the most part by people with little or no medical training or experience. Christianity did not promise the miraculous healing that the Greek cult of Asclepius did though such healings were certainly reported throughout the ancient period. But it regularly provided something that was less spectacular and more permanent: The ministry of medical care in early Christianity began as a church-based diaconal, not professional, ministry. It was provided by unskilled, ordinary people with no medical training. Yet the church created in the first two centuries of its existence the only organization in the Roman world that systematically cared for its destitute sick. In the early fourth century, lay Christian orders began to appear in the large cities of the Eastern Roman Empire. The mission of these groups, drawn mostly from the lower classes, was to reach out to the indigent sick in cities such as Alexandria and Antioch. These cities had a large population of homeless sick and dying on the streets. The philopoi would distribute food and money to them and take them to the public baths, where their basic hygienic needs could be met and they could find warmth in winter. None had medical training, but they were motivated by compassionate concern. Over time they became an intermediate order between clerical orders and laymen, and in the sixth and seventh centuries they were attached to large churches in the major cities of the Byzantine Empire and continued the long tradition of church-centered diaconal care of the sick. Continuing to bear fruit Many movements in the history of Christian philanthropy have drawn on the legacy of early Christian medical care. Roman Catholics have excelled in organizing and institutionalizing medical charities, including hospitals, most of them maintained by religious orders of women. The Sisters of Charity, founded by St. Vincent de Paul , became

a major force in caring for the sick. The nineteenth century saw a further explosion of Christian efforts on behalf of the sick poor: In Holland, a Mennonite deaconess movement cared for the ill, and in England the Quaker Elizabeth Fry revolutionized care for prisoners and the sick. Taking cues from both of these, Pastors Theodore Fliedner and Wilhelm Loehe pioneered in their native Germany a Lutheran deaconess movement that soon spread throughout Europe. Medical missions have constituted another important branch of Christian medical philanthropy. Missionaries to European colonial possessions often established medical facilities where none had previously existed, and much of their work was invested in the founding of hospitals, leprosaria treatment facilities for lepers , and other health-related institutions. Many of the leading hospitals in cities throughout the world today are the products of Christian medical or missionary charity. Christians saw the suffering of others as an opportunity to provide compassionate care in the name of Christ.

Chapter 2 : 10 Innovations That Built Ancient Rome - HISTORY

the fall of the Roman empire suspended medical progress during this period. renaissance. the first medical universities were established during this period. modern times.

Sponsored Schools The History of Nursing In essence, the nursing profession has very much been around since the beginning of time, though has drastically evolved over the course of history. Today, nurses are one of the most important professions within the health care industry and are learned in a wide range of occupational duties that are utilized within a variety of settings throughout the world. **Beginnings of the Nursing Profession** It is believed that the first recorded aspects of nursing place the inception of the profession during the height of the Roman empire, around A. It was during this time that the Empire sought to place a hospital within every town under its rule. As the Roman empire became the Byzantine empire, they further innovated within the field by creating 2 fully-developed hospitals within the great city of Constantinople, which housed both male and female nurses. These nurses were known as hypourgoi and helped to push forward nursing on a more global scale. **Nursing in the Middle Ages** When taking a glimpse at nursing in the Middle Ages, there were a myriad of advancements and innovations that were implemented within the nursing industry during these years, helping to form some of the roots of modern nursing. During this period of time, the industry was still largely based on religion, with the vast majority of available nurses consisting of nuns and even monks. Hospitals functioned in a myriad of ways, housing lepers and refugees among the typical sick and injured patients. They were explicitly told to care for all of the sick, no matter their nation of origin or the religion they belonged to. The Emperor also demanded that hospitals should be attached to every cathedral and monastery within Europe, which helped to spur demand for even more nurses. It was during the dawn of the 10th and 11th centuries that nursing began to expand, due primarily to a number of different rulings within Europe. For one, monasteries started housing hospitals inside their premises, as well as a separate infirmary, though this was only to be used by those that identified as religious. Within these monasteries, nurses were made to provide patients with any type of service that they asked for or required, even outside of general health care services. This model of nursing became increasingly popular throughout many countries, primarily those of Germany and France, providing the general outline for how nurses are expected to treat their patients today. Nurses were often asked to provide assistance and care by traveling to neighboring areas in order to make house calls. Not only did many monasteries house hospitals, it was also around this time that each church was required to have a hospital contained within the structure. However, these churches were more difficult to maintain than their monastery counterparts, due in large part to the fact that monasteries existed within the countryside, while churches were often set in the city, meaning that more people would require the services of the nurses and doctors. As such, the priest within each church was required to assist with the hospital that resided within their church. This proved successful in both the short and long term and allowed Germany to craft well over hospitals between the years of and , expanding the role of nurses within Europe dramatically. This type of health care facility was different from those of churches and monasteries, due in large part to nurses providing certain richer customers with alms and other medicines. The alms, in particular, were utilized in burial preparations, thus becoming highly sought after. This style of aid was distinctly new from anything seen in the past and seemed to usher in a new era of nursing. Unfortunately, as Europe entered the beginning of the 17th century, nursing as a whole became exceedingly diminished for a wide variety of reasons. For one, most monasteries were shut down during the Protestant reformation, as well as the hospitals within them. The nuns that had been working as nurses were made leave the profession and stay at home. It was due to this that nursing largely stagnated between the 17th and 18th centuries in Europe, as there were simply not enough hospitals available. However, in the few areas of Europe in which the Protestant rule had not spread and Catholics still retained control, the role of nurses remained largely the same, diminished only in numbers. While staying at the estate, these nurses would often be required to perform the duties typically undertaken by apothecaries, physicians and surgeons. While nursing faced more tumultuous times during the years to come, nurses remained in demand more than ever and were often tasked with administering certain

health care services to patients that might have been wary of the care provided by actual doctors. That being said, the roots of modern nursing began to take shape in the 18th and 19th centuries. During these years, Britain and North America were at the forefront of innovation within the industry, though with each introducing different forms of nursing to the market. Nurses were sent to attend to the sick and wounded soldiers in battle. During this time, deaths from injuries were commonplace, due to the lack of general hygiene and the huge amount of fatal infections that resulted from these wounds. Upon encountering this, Nightingale asked for and received aid from the British government that allowed for much better hygiene throughout the battlefield and nearby hospital. It was due to this that the rate of death from infections dropped drastically in but a short period of time. Throughout the rest of her life, Nightingale advocated for sanitary living conditions for patients, as well as providing similar designs to be implemented within hospitals, an ideal that has spread throughout the entirety of the nursing profession throughout the following years.

Modern Nursing Within Europe

It was because of the influence of Florence Nightingale that nursing as a profession became what it is today, though both Europe and the U. As for Europe, the nursing profession flourished when, in 1860, Nightingale opened the very first nursing school in London, which was known as the Florence Nightingale School for Nurses. This helped to pave the way for more and more schools being founded and opened officially for prospective nurses to receive actual training and education for the field they were entering, thus providing roots for modern nursing. While Florence Nightingale is one of the most popular nurses in history, it is not to be believed that she was the only notable figure in the field of nursing. These women worked tirelessly to provide high quality health care to anyone that needed it, providing the model for nursing that still exists today. Within Europe, Germany, France and Britain were at the forefront of bringing nursing into the modern age. A deaconess is basically a nurse in charge of providing health care for other women in the area. Despite the fact that deaconesses had all but vanished for a few centuries before then, they were brought back by Theodor Fliedner in when he opened a deaconess motherhouse situated nearby the Rhine river. This move allowed for the floodgates to open in Germany, popularizing this form of nursing. By the dawn of the 20th century, there were reportedly well over 5, deaconesses in all of Europe, primarily Germany. In fact, deaconesses were even found to be located in other countries as well, such as the U. In France, nursing was still largely centered around religion. Within the nearly 1, hospitals located all throughout France, the nursing staff was comprised of well over 10, Catholic nuns in 1800. This number increased even moreso in the next 40 years to 15, However, at the dawn of the 20th century, the French government moved to create a system wherein hospitals were more heavily secularized, in order for hospitals to receive the proper support that they needed from outside of the church. This allowed for a better quality of care for all patients. The first World War gave a huge boom to nursing within the country. While many of the nurses that joined the ranks during this time were untrained and seemed to leave the profession not long after the war ended, it brought about a larger focus on nursing by France that was missing before then, which was further signified by the offering of a national diploma in nursing in the year 1919. This move was largely brought about because of the necessity for nursing within the Crimean War. These military hospitals were developed solely to provide care to soldiers and military patients. As such, many nurses throughout Europe started being appointed directly to these hospitals around that time. However, one thing that still stood out was that many of the available nurses at the time were simply untrained, in both the profession and in how to deal with the exceedingly adverse conditions brought about during the time of war. While the health care being administered was useful and still helped to save lives, it was becoming clear that nurses would need to undergo some sort of training to become better equipped to handle any type of condition.

Modern Nursing in the U.

Nursing within the United States took a decidedly different path than in similar countries. Due to the absence of a stronghold of Catholicism within America, the nursing field was not comprised of nuns. However, many of the hospitals that were created in the ever-expanding United States throughout the next 2 centuries were largely derived because of the fear from local governments of diseases spreading to the more wealthy population. Therefore, they did not receive the proper funding that would have allowed for the training of nurses. It should also be noted that the only roles for a nurse within these hospitals during this period of time revolved primarily around tending to the elderly and those with sicknesses, such as the flu and the common cold. These almshouses were rarely equipped to

deal with any actual illnesses that needed to be treated immediately. However, most nurses spent their time tending to soldiers wounds within the Civil War, as well as joining the American Red Cross soon after the war. There were a number of factors that contributed to the general rise in nursing. The first of these revolved around the state of the nursing schools that had already existed at this time. While these schools were somewhat useful at training nurses, they were solely controlled by nurses. Although this did have its advantages, they did not have enough resources to properly innovate and advance the overall profession. This was changed in when schools became controlled by hospitals instead, allowing for a more hands-on approach to training, which proved highly useful in giving prospective nurses the necessary tools to train efficiently. Before this, nurses-in-training would only learn through the medical books that they were taught with. At this time, most of these nurses were women. One of the more ambitious nursing programs brought to America was Frontier Nursing Service, which was founded by Mary Breckinridge. This organization was designed to provide nursing care to poor citizens living in the more rural areas of the U. Many of the modern advancements in nursing took place after WWI and into WWII, when technology was starting to take a bigger role in the world. Despite the low presence of nurses in Britain at this time, the war created a resurgence throughout the country. Within Britain, nurses involved in the QAIMNS service mentioned previously would travel with soldiers to the battlefield of every campaign Britain was involved in during the war. While nurses were not commissioned officers at the onset of the war, they were soon given the ability to gain rank, up to Brigadier, due to the fact that they largely faced the same horrific conditions as the soldiers themselves. The nursing profession within the United States became as popular as it is today due primarily to its huge focus within WWII. Many women from around the nation were desperate to give care to the soldiers that were fighting across the seas. As such, the entire prospect became an attractive one, as nurses were being called heroes more than ever during this period. This led to thousands upon thousands of women volunteering for the cause. Despite the fact that many nurses went in untrained, they received a wealth of specialty training while overseas by dealing firsthand with the atrocities they were presented with on the front. As such, they brought home a large tool-set of skills after the war that were valuable within the medical profession. The government took notice of this and placed millions of dollars into the ever-expanding healthcare industry, just at the moment when the technological age was beginning, allowing for an increase in medical innovations. The American Nurses Association also saw the publishing of an American Journal of Nursing, which allowed both nurses and doctors to stay up-to-date on the latest studies and research pertaining to the field. The 20th century also paved the way for a larger and more expanded role for nurses, introducing a number of distinct areas in which nurses could specialize in, including such specialty care as orthopedics, trauma, critical care, pediatrics and neonatal nursing. Throughout the years leading up to the current day, nursing also saw a shift away from the typical description of a doctors assistant to performing many of these duties themselves, including everything from performing procedures to prescribing medication. As nursing is generally all about the care of a person, a nurses duties can cover a large variety of different practices. This allows for a huge amount of diversity within the field of nursing that never use to be present before the last 50 or so years. For instance, in the U. Upon obtaining any one of these degree types, students will then have the opportunity of taking a licensure examination and becoming a registered nurse.

Chapter 3 : The Dark Ages | Middle Ages

Medicine in ancient Rome combined various techniques using different tools, methodology, and ingredients. Roman medicine was highly influenced by Greek medicine. Greek physicians including Dioscorides and Galen practiced medicine and recorded their discoveries in the Roman Empire.

Takeaway The Roman Empire began around B. Medical knowledge and practice were advanced for the time, and the ancient Romans made progress in many areas. The Romans encouraged the provision of public health facilities throughout the Empire. Their medicine developed from the needs of the battlefield and learnings from the Greeks. Among the practices that the Romans adopted from the Greeks was the theory of the four humors, which remained popular in Europe until the 17th century. Greek influence The temple of Aesculapius stood on the Tiber Island. The original is now long gone, but this Renaissance-era replica may bear some resemblance to it. The Romans had their first introduction to Greek medicine when Archagathus of Sparta, a medical practitioner, arrived in Rome in B. Other scientists and doctors came from Greece, first as prisoners of war and later because they could earn more money in Rome. They continued researching Greek theories on disease and physical and mental disorders. The Romans allowed them to carry on their research and adopted many of their ideas. However, unlike the Greeks, the Romans did not like the idea of dissecting corpses, so they did not discover much about human anatomy. The spiritual beliefs surrounding medicine in Greece were also common in Rome. By the 3rd century B. Initially, they built shrines, but these expanded in time to include spas and thermal baths with doctors in attendance. When plagues occurred in Italy in B. E , the Romans built a temple to the Greek god Apollo, who they believed had healing powers. The Romans also took a sacred snake from the Greeks. It escaped but reappeared on the Tiber Island, where the Romans built a sanctuary for it. People would come to this place in search of healing. On conquering Alexandria, the Romans found various libraries and universities that the Greeks had set up. They contained many learning centers and places for research as well as a wealth of documented knowledge of medicine. Examples of medical practice It was by observing the health of their soldiers that Roman leaders began to realize the importance of public health. On the battlefield Romans on the battlefield used surgical tools to remove arrowheads and carry out other procedures. Most Roman surgeons got their practical experience on the battlefield. They carried a tool kit containing arrow extractors, catheters, scalpels, and forceps. They used to sterilize their equipment in boiling water before using it. The Romans performed surgical procedures using opium and scopolamine to relieve pain and acid vinegar to clean up wounds. They did not have effective anesthetics for complicated surgical procedures, but it is unlikely that they operated deep inside the body. Maternity care The Romans also had midwives, whom they treated with great respect. Records of medical instruments include a birthing stool, which was a four-legged stool with arm and back supports and a crescent-shaped opening for the delivery of the baby. Cesarean sections did sometimes take place. The women would not survive , but the baby might. Hospitals In purpose-built hospitals, people could rest and have a better chance of recovery. Learning about the human body As Roman doctors did not have permission to dissect corpses, they were somewhat limited in their understanding of human anatomy. However, soldiers and gladiators often had wounds, which could be severe, and doctors had to treat them. In this way, they learned more about the human body. Claudius Galen, who moved from Greece to Rome in AD, became an expert on anatomy by dissecting animals and applying his knowledge to humans. He also wrote several medical books. Galen also dissected some human corpses. He dissected a hanged criminal and some bodies that a flood had unearthed in a cemetery. As a result, Galen displayed an excellent knowledge of bone structure. After cutting the spinal cord of a pig and observing it, he also realized that the brain sends signals to control the muscles. Learning about causes The Romans made progress in their knowledge of what causes diseases and how to prevent them. Medical theories were sometimes very close to what we know today. For example, Marcus Terentius Varro â€”27 B. E believed that disease occurred due to minute creatures too small for the naked eye to see. We now know about bacteria and viruses, which we can only see using a microscope. However, others believed that the stars caused illness. Lucius Junius Moderatus Columella, who lived from 4 C. He thought that diseases came from swamp vapors.

Until two centuries ago, many of these beliefs were still popular. Diagnosis and treatment Roman diagnosis and treatment consisted of a combination of Greek medicine and some local practices. As the Greeks did before them, Roman physicians would carry out a thorough physical examination of the individual. Progress in diagnosis, treatment, and prognosis in ancient Rome was slow and patchy. Doctors tended to develop their own theories, which led them to diverge in several different directions. Herbal remedies The Romans used a wide range of herbal medicines and other remedies, including: Fennel was a healing herb in Roman times. This plant was a standard treatment for nervous disorders because Romans believed that it calmed the nerves. The Romans applied this to sores. Also known as horseheal, people used this herb for digestive problems. Doctors prescribed egg yolk for dysentery. This perennial had religious value. Its use was common among those who believed that the gods could heal them. Doctors advised that garlic was good for the heart. People with sore eyes used this. Doctors often prescribed this plant for lung diseases, especially pneumonia. Cato recommended this for many purposes, including a hangover remedy and a cure for wounds and sores. People used this as a form of contraceptive and for fever, cough, indigestion, a sore throat, aches and pains, and warts. Historians are not sure exactly what silphium was, but they believe it to be an extinct plant of the genus *Ferula*, possibly a variety of giant fennel. People used this as an antiseptic. He was a Greek botanist, pharmacologist, and physician who practiced in Rome when Nero was the ruler. He became a famous Roman army doctor. He wrote a 5-volume pharmacopeia called "De Materia Medica," which listed over herbal cures. Doctors used "De Materia Medica" extensively for the next 1, years. Many Roman doctors came from Greece. They firmly believed in achieving the right balance of the four humors and restoring the "natural heat" of people with medical conditions. Galen said that opposites would often cure people. For a cold, he would give the person hot pepper. If they had a fever, he advised doctors to use cucumber. Public health Public health aims to keep the whole community in good health and prevent the spread of disease. Today, among other things, it involves vaccination programs, promoting a healthful lifestyle and diet, building hospitals, and providing clean water for drinking and washing. The Romans, unlike the Greeks and Egyptians, were firm believers in public health. They knew that hygiene was vital to prevent the spread of diseases. Practical projects, such as creating a water supply, were very important to them. They built aqueducts to pipe water to cities. The sewage system in Rome was so advanced that nothing matching it was built again until the late 17th century. One explanation of how the Romans were able to organize such major public projects is that they had a vast but centralized empire. The Emperor wielded his power across the Roman territory, and there was enough cheap labor and sufficient wealth to carry out these schemes. Some of the wealthy even had underfloor heating in their homes. The Romans also promoted facilities for personal hygiene by building public baths and washrooms. Their focus was on maintaining a motivated and healthy army, but their citizens also benefited. Public health facilities The Romans built baths, hospitals, and water supply channels throughout their Empire to encourage public health. Examples of some Roman facilities include: There were nine public baths in Rome alone. Each one had pools at varying temperatures. Some also had gyms and massage rooms. Government inspectors were vigorous in their enforcement of proper hygiene standards. Ancient Romans were responsible for setting up the first hospitals, which they initially designed to treat soldiers and veterans.

Chapter 4 : BBC Class Clips Video - History KS3 / GCSE: Medieval Medicine

Roman medicine was greatly influenced by earlier Greek medical practice and literature but would also make its own unique contribution to the history of medicine through the work of such famous experts as Galen and Celsus.

Roman Empire in the first century A. Two thousand years ago, the world was ruled by Rome. From England to Africa and from Syria to Spain, one in every four people on earth lived and died under Roman law. The Roman Empire in the first century AD mixed sophistication with brutality and could suddenly lurch from civilization, strength and power to terror, tyranny and greed. Leader of the pack At the head of the pack were the emperors , a strange bunch of men always men. Few were just OK: They had a job for life, but that life could always be shortened. Assassination was an occupational hazard. This was as finely graded as flour. Specific qualifications were needed for Romans to be admitted as equestrians or senators. Even freed slaves had different rights from citizens. While all Romans enjoyed the baths and made a feature of the evening meal, their clothes and food, homes and hobbies, were a product of their class. Those that tried to climb the ranks too quickly were savagely mocked by Petronius, just one of many Roman writers whose observation and wit still breathes life into a society long since dead. More than a city Petronius knew his city well, but Rome itself was much more than just one city. Its empire was a vast collection of states, backed up by force. It was not always peaceful. Enemies and rebels like Cleopatra and Boudicca revealed the Roman steel that lay behind its civilization. Even allowing for the occasional revolt, the empire was an enormous achievement. It was a huge marketplace in which citizens could trade and travel unhindered. This helped the spread of foreign religions like Judaism and early Christianity as far as Rome itself. Slowly, these religions encroached on traditional Roman spirits and gods. He was the first of many foreign emperors that showed the Roman Empire to be a vast, multi-cultural melting pot that still has relevance, more than 2, years later.

Chapter 5 : Medical News Today: Ancient Roman medicine - Feature News

The Roman Empire began around B.C.E. and existed for around 1, years. Medical knowledge and practice were advanced for the time, and the ancient Romans made progress in many areas.

Whereas Hippocrates laid the foundation of Greek Medicine, Galen further developed its theory and practice, and carried Greco-Roman medicine to its zenith. Pergamum was an ancient center of learning and medicine, having an Asclepion and a famous library that second only to the one in Alexandria. Galen was born into the lap of luxury, which afforded him ample time to study. When Galen was just a boy, his father had a dream in which Asclepius appeared to him and told him to let his son study medicine. And so, the young Galen went to the local Asclepion to be trained by its elder physician-priests. Galen remained a lifelong devotee of Asclepius. When Galen was 19, his father died, which sent him on the journeyman phase of his medical education. He first studied in Smyrna, or present day Izmir, Turkey, and then traveled to Alexandria, where he finished his studies. His medical training in Alexandria made him an empiricist. From there, he went to Rome, where his great skill and ability quickly attracted the attention of the influential and elite. Galen became the personal physician to the emperor Marcus Aurelius. Philosophy enables the physician to discern between truth and illusion, or between reality and mere surface appearances, which is so important in diagnosis. He also developed and expanded the humoral physiology and pathology of Hippocrates. He tended to view health as the balanced, harmonious, optimal functioning of all the organs and systems of the body. Galen believed in the Aristotelian doctrine that, in Nature, form follows function. If we want to understand the function of an organ, tissue or body part, we must first study its form. Galen was fanatical in his pursuit of anatomical knowledge. He conducted dissections and vivisections on animals, chiefly apes, to figure out by inference and experiment how the human body was structured, and how it worked. By clamping the ureters of living apes and watching the kidneys swell, Galen concluded that the kidneys produce urine. By cutting or stimulating various spinal nerve roots, he figured out which organs and muscles they controlled. Galen is most admired by modern medicine for being a brilliant anatomist who was way ahead of his time. In pharmacology, Galen developed a system of Galenic degrees, which enabled physicians and pharmacists to gauge more precisely the effects of a medicinal substance. In the preparation of medicines, Galen considered increased quantity to be a poor substitute for poor quality of the ingredients. Galen personally visited the exotic locales where many key ingredients of his medicinal formulas were produced to better understand matters of quality. Since Venice was a key center for its manufacture, it is sometimes called Theriac Venezian, or Venice Treacle. Galen was also an expert on the pulse; many consider him to be the originator of pulse diagnosis. He wrote a treatise on the subject, entitled *De Pulsibus*. Being a lifelong devotee of Asclepius, Galen was a firm believer in the healing and diagnostic power of dreams. He even wrote a treatise on the medical interpretation of dreams. Galen was a prodigious author, and wrote some 80 different medical treatises. Today, many of them have been lost. Galen is often criticized for being egotistical, but perhaps in his case it was well-deserved. His writings are full of long-winded refutations of his rivals and critics, whose partial knowledge and fallacious reasoning he despised. Galen considered the profit motive and the love of money to be the worst reasons for becoming a physician. Being independently wealthy, money mattered little to him. He was only after two things: For over a thousand years after his death, Galen, with his prodigious accomplishments, was considered to be the gospel truth, the ultimate authority on all matters medical. Medieval medical authorities dogmatically agreed: If Galen figured it all out, why look any further? This was indeed to prove a mixed blessing for the history of medicine.

Chapter 6 : Greek Medicine: Galen

The Roman Empire began around B.C.E. and existed for around 1, years. Medical knowledge and practice were advanced for the time, and the ancient Romans made progress in many areas. The Romans encouraged the provision of public health facilities throughout the Empire.

The Church was a very large and very powerful organisation, and if the Church approved of medical ideas, they could spread like wildfire. Galen wrote that the body was designed to perfection, with every part having a specific function, which demonstrated the Christian belief that God is the mighty, infallible creator of all things. For hundreds of years after his death, his ideas were used. Schools at monasteries taught monks a lot about medicine, and as people came to them to be cured, experience " and therefore more knowledge " was gained in the process. Islam greatly helped the spread of medicine in the Middle East, as Islamic scholars thought that if Allah had created evil such as disease, He would have created a cure for them as well. In these ways, medicine was one of the greatest factors towards medical progress. This was religion at its least co-operative. Since its birth, the Christian religion has tried to show this order through actions. Medicine is a wonderful example of this. People have misinterpreted the word of their God, and maybe acted without correct thought, but this religion has always been there for the weak and suffering. Jesus himself went out of his way to heal people, and this example has inspired generations after to fight against disease and sickness. Many great doctors have been Christians, and without them, God knows what would have happened! Comment by Peter " November 27, 7: The church also taught that God would cure everything so it restricted people to test new medicine or theories as they were expected to pray to cure themselves. An example of this is that it was the church that banned dissection on human bodies and therefore slowed human understanding about how the human body is made up. Comment by Emz " November 28, 9: What about the Reformation? Look forward to more comments Miss A Reply In some ways religion has hindered medicine because the Church believed that God caused and cured disease. He created the Church of England run by him. He went around burning all the catholic churches and schools. This had the effect that people could do more experiments which the catholic Church had not allowed. Barak Obama has already said he will lift these restrictions. Comment by George B " November 29, Because people believed God would cure them and all they had to do was pray.. This then suggested that the body was not needed to pray for so it was no longer important in there eyes. This then allowed dissection on the corpses. As a organisation the church had objects like paintings and symbolic signs. Another matter which was not as important was the Priests they were allowed to become married, more other things made these priests not important which then lead to the idea that no one was first and that we were all equal, therefore touching someone would not cure you. However the protestant said that it was just a symbol for it and it was not real. This shows that this new side of Christianity had a big impact and especially on medicine. In several ways religion would have hindered medicine, this is because everyone followed the church mostly and would listen to them. This could have changed the rate of amount of individuals being brave and finding new ideas other than the church. They did think that only God can cause and cure diseases which meant that they had lack of knowledge on how we get ill and what was the reason for it. This hindered the chance of many developments on theories on cures that reason on how we get diseased. In conclusion, i think that religion has not hindered religion it to a quite high extent. The reason for my answer is that the Reformation time had changed the thoughts towards medicine because of the religion protestant. They did many things to help medicine which stated in my first paragraph. They also translated the Bible in to many languages other than Latin. This allowed people to interpret it and to think for themselves. However you can say that it did hinder medicine, I agree with that as well because many other theories could have appeared other than just religious ones, which can be wrong. Did religion help or hinder medicine Reply No yasmin think your wrong. This allowed them to dissect on it.

Chapter 7 : Year 10 – Has religion helped or hindered medicine? | Bishop Justus History

Many Greek medical ideas were adopted by the Romans and Greek medicine had a huge influence on Roman medicine. The first doctors to appear in Rome were Greek, captured as prisoners of war. Greek doctors would later move to Rome because they could make a good living there, or a better one than in the Greek cities.

Introduction[edit] The Roman Empire was a complex and vigorous combination of Greek and Roman cultural elements [1] forged through centuries of contact. Later Latin authors, notably Cato and Pliny , believed in a specifically Roman type of healing based on herbs, chants, prayers and charms easily available to any head of household. Setting aside some of the broader implications of the Greek influence on Roman society, the effect of Greek medicine, ethnography, and meteorology was particularly pertinent to two fields: This was particularly important from the perspective of the Roman army, [5] in which there were many medical advances. The variety and nature of the surgical instruments discovered in Roman remains indicate a good knowledge of surgery. The incorporation of Greek medicine into Roman society allowed Rome to transform into a monumental[clarification needed] city by BCE. Tragic famines and plagues were often attributed to divine punishment; and appeasement of the gods through rituals was believed to alleviate such events. Miasma was perceived to be the root cause of many diseases, whether caused by famine, wars, or plague. The concept of contagion was formulated, resulting in practices of quarantine and improved sanitation. He became an expert on the human anatomy by dissecting animals, including monkeys, in Greece. The caduceus is a winged staff with two snakes wrapped around it Greek symbols and gods greatly influenced ancient Roman medicine. The caduceus , pictured right, was originally associated with Hermes, the Greek god of commerce. This symbol later became associated with the Roman God, Mercury. Later, in the 7th century, the caduceus became associated with health and medicine due to its association with the Azoth, the alchemical "universal solvent". Cato regarded the welcome given in Rome to Greek medicine and physicians as a major threat. Cato the Elder himself examined those who lived near him, often prescribing cabbage as a treatment for many ailments ranging from constipation to deafness. He would issue precise instructions on how to prepare the cabbage for patients with specific ailments. He also used cabbage in liquid form. Cato would treat fractured or broken appendages with two ends of a cut reed that were bandaged around the injury. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. September Learn how and when to remove this template message Many Greek doctors came to Rome. Many of them strongly believed in achieving the right balance of the four humors and restoring the natural heat of patients. By around 50 BCE, it was more common than not to have a Greek physician. Pedanius Dioscorides Pedanius Dioscorides c. He became a famous army doctor. Dioscorides wrote a 5-volume encyclopedia, *De Materia Medica* , which listed over herbal cures, forming an influential and long-lasting pharmacopoeia. *De Materia Medica* was used extensively by doctors for the following years. According to the *Suda* , he practised in Alexandria and subsequently in Rome. He was the chief representative of the Methodic school of physicians. His treatise *Gynaecology* is extant first published in , later by V. Rose , in , with a 6th-century Latin translation by Muscio , a physician of the same school. Galen Galen CE [14] – c. By the age of 20, he had served for four years in the local temple as a therapeutes "attendant" or "associate" of the god Asclepius. Although Galen studied the human body, dissection of human corpses was against Roman law , so instead he used pigs, apes, and other animals. Galen moved to Rome in There he lectured, wrote extensively, and performed public demonstrations of his anatomical knowledge. He soon gained a reputation as an experienced physician, attracting to his practice a large number of patients. Among them was the consul Flavius Boethius , who introduced him to the imperial court, where he became a physician to Emperor Marcus Aurelius. Despite being a member of the court, Galen reputedly shunned Latin , preferring to speak and write in his native Greek , a tongue that was actually quite popular in Rome. In Galen returned to Pergamon, but went back to Rome for good in Food was believed to be the initial object that allowed the stabilization of these humours. By contrast, drugs, venesection , cautery and surgery were drastic and were to be used only when diet could no longer help. He writes that a physician "must be skilled at reasoning about the

problems presented to him, must understand the nature and function of the body within the physician world[clarification needed] and must "practice temperance and despise all money". The writings of Galen survived more[clarification needed] than other medical writings in antiquity. His knowledge of medicine allowed him to flourish as a physician. Asclepiades was a leading physician in Rome and was a close friend of Cicero. The two were required to be in sync[clarification needed] in order to avoid disease. His other remedies included: Asclepiades is the first documented physician in Rome to use massage therapy. Late 1st century The Roman medical system saw the establishment of the first hospitals; these were reserved for slaves and soldiers. Physicians were assigned to follow armies or ships, tending to the injured. Medical care for the poor was almost non-existent, so the poor had to resort to spiritual aid. The valetudinaria plural of valetudinarium were field hospitals or flying military camps [21] and began as a small cluster of tents and fortresses dedicated to wounded soldiers. Over time, the temporary forts developed into permanent facilities. They were usually placed near the outer wall in a quiet part of the fortification. Ancient Roman bronze catheters 1st century CE A variety of surgical instruments are known from archaeology and Roman medical literature, including: Bone levers A tool used to leverage bones back into their proper place in a limb. Cupping vessels Containers used for bloodletting. Vessels of different sizes were used depending on how much blood was expected. Tubes After surgery, a bronze or lead tube would be inserted into the patient to prevent adhesion or contractions. This instrument was used for several purposes, such as stopping bleeding, cutting flesh or removing growths. Spatula probes A double sided instrument used by almost every physician. One end was used for mixing medications, while the other end was flat and used to spread the medications onto the patient. Scalpels Could be made of either steel or bronze. Ancient scalpels had almost the same form and function as those of today. The most usual type of scalpels were the longer, steel scalpels. These could be used to make a variety of incisions, but they seem to be particularly suited for deep or long cuts. Smaller, bronze scalpels, referred to as bellied scalpels, were also used frequently since the shape allowed delicate and precise cuts to be made. There were two basic types of hooks: Blunt hooks were used primarily as probes for dissection and for raising blood vessels. Sharp hooks, on the other hand, were used to hold and lift small pieces of tissue so that they could be extracted, and to retract the edges of wounds. They were used to remove diseased bone tissue from the skull and to remove foreign objects such as a weapon from a bone. Bone forceps Used to extract small fragments of bone which could not be grasped by the fingers. Early catheters were hollow tubes made of steel or bronze, and had two basic designs. There were catheters with a slight S curve for male patients and a straighter one for females. There were similar shaped devices called bladder sounds that were used to probe the bladder in search of calcifications. The physician crushed the uvula with forceps before cutting it off in order to reduce bleeding. Most of the vaginal specula discovered consist of a screw device which, when turned, forces a cross-bar to push the blades outwards.

Chapter 8 : BBC - GCSE Bitesize: Overview

The fall of the Roman Empire plunged Europe into the Dark Ages and decentralized the region. The Imperial system in Rome was replaced with a loose-knit group of kings and princes throughout Europe. Some experts believe the fall of the Roman Empire was necessary to dismantle the old Roman slave.

Syrian texts[edit] During the 10th century, Ibn Wahshiyya compiled writings by the Nabataeans , including also medical information. The Syrian scholar Sergius of Reshaina translated various works by Hippocrates and Galen, of whom parts 6â€™8 of a pharmacological book, and fragments of two other books have been preserved. Syrian physicians also played an important role at the Academy of Gondishapur ; their names were preserved because they worked at the court of the Abbasid caliphs. Arabian physicians trained in Gondishapur may have established contacts with early Islamic medicine. Under Harun al-Rashid , at latest, the first translations were performed of Indian works about medicine and pharmacology. In one chapter on Indian medicine , Ibn al-Nadim mentions the names of three of the translators: Their concepts and ideas about medical ethics are still discussed today, especially in the Islamic parts of our world. Their ideas about the conduct of physicians, and the doctorâ€™patient relationship are discussed as potential role models for physicians of today. Al-Tabari, a pioneer in the field of child development , emphasized strong ties between psychology and medicine, and the need for psychotherapy and counseling in the therapeutic treatment of patients. His encyclopedia also discussed the influence of Sushruta and Chanakya on medicine, [37] including psychotherapy. His works, many of which no longer survive, are cited by later physicians. Taking what was known at the time by the classical Greek writers, Al-Tamimi expanded on their knowledge of the properties of plants and minerals, becoming avant garde in his field. This book was translated by Constantine and was used as a textbook of surgery in schools across Europe. Folio from the "Liber continens" by Al-Razi Right image: Rhazes was one of the most versatile scientists of the Islamic Golden Age. A Persian-born physician, alchemist and philosopher, he is most famous for his medical works, but he also wrote botanical and zoological works, as well as books on physics and mathematics. Many of his books were translated into Latin, and he remained one of the undisputed authorities in European medicine well into the 17th century. In medical theory, al-Razi relied mainly on Galen , but his particular attention to the individual case, stressing that each patient must be treated individually, and his emphasis on hygiene and diet reflect the ideas and concepts of the empirical hippocratic school. The Comprehensive book of medicine, Continens Liber, The Virtuous Life was one of al-Razis largest works, a collection of medical notes that he made throughout his life in the form of extracts from his reading and observations from his own medical experience. Al-Razi cites Greek, Syrian, Indian and earlier Arabic works, and also includes medical cases from his own experience. Each volume deals with specific parts or diseases of the body. He describes the signs of illness and does not omit anything which would be necessary for anyone who wants to learn the art of healing. However, he does not talk about physical topics, about the science of the elements, temperaments and humours, nor does he describe the structure of organs or the [methods of] surgery. His book is without structure and logical consequence, and does not demonstrate the scientific method. The first six sections are dedicated to medical theory, and deal with anatomy, physiology and pathology, materia medica, health issues, dietetics, and cosmetics. The remaining four parts describe surgery, toxicology, and fever. In his book entitled "Kitab al-Mansuri", al-Razi summarizes everything which concerns the art of medicine, and does never neglect any issue which he mentions. However, everything is much abbreviated, according to the goal he has set himself. Under various titles "Liber medicinalis ad Almansorem"; "Almansorius"; "Liber ad Almansorem"; "Liber nonus" it was printed in Venice in , [51] , [52] and This book covers the treatments and cures of diseases and ailments, through dieting. It is thought to have been written for the noble class who were known for their gluttonous behavior and who frequently became ill with stomach diseases. Kitab al-Jadari wa-l-hasba De variolis et morbillis [edit] Until the discovery of Tabit ibn Qurras earlier work, al-Razis treatise on smallpox and measles was considered the earliest monograph on these infectious diseases. His careful description of the initial symptoms and clinical course of the two diseases, as well as the treatments he suggests based on the observation of the symptoms, is

considered a masterpiece of Islamic medicine. One of the oldest existing copies of The Canon of Medicine by Avicenna, c. The Canon of Medicine, printed in Venice Ibn Sina , more commonly known in west as Avicenna was a Persian polymath and physician of the tenth and eleventh centuries. He was known for his scientific works, but especially his writing on medicine. His other works cover subjects including angelology , heart medicines, and treatment of kidney diseases. The first volume is a compendium of medical principles, the second is a reference for individual drugs, the third contains organ-specific diseases, the fourth discusses systemic illnesses as well as a section of preventative health measures, and the fifth contains descriptions of compound medicines. National Library of Medicine. When food enters the stomach, especially when it is plentiful, the stomach dilates and its layers get stretched I then cut open the stomach and let the water out. Abd al-Latif al-Baghdadi , while on a visit to Egypt , encountered many skeletal remains of those who had died from starvation near Cairo. He examined the skeletons and established that the mandible consists of one piece, not two as Galen had taught. I have repeated the observation a great number of times, in over two hundred heads [â€] I have been assisted by various different people, who have repeated the same examination, both in my absence and under my eyes. He never published his anatomical observations in a separate book, as had been his intention. Medieval Islamic physicians used natural substances as a source of medicinal drugsâ€”including Papaver somniferum Linnaeus, poppy , and Cannabis sativa Linnaeus, hemp. Poppy was prescribed by Yuhanna b. Masawayh to relieve pain from attacks of gallbladder stones , for fevers , indigestion , eye, head and tooth aches, pleurisy , and to induce sleep. Surgical procedures were known to physicians during the medieval period because of earlier texts that included descriptions of the procedures. Surgery was uncommonly practiced by physicians and other medical affiliates due to a very low success rate, even though earlier records provided favorable outcomes to certain operations. Techniques[edit] Bloodletting and cauterization were techniques widely used in ancient Islamic society by physicians, as a therapy to treat patients. These two techniques were commonly practiced because of the wide variety of illnesses they treated. Cauterization, a procedure used to burn the skin or flesh of a wound, was performed to prevent infection and stop profuse bleeding. To perform this procedure, physicians heated a metal rod and used it to burn the flesh or skin of a wound. This would cause the blood from the wound to clot and eventually heal the wound. The heat and suction from the glass caused the blood to rise to the surface of the skin to be drained. Both cupping and phlebotomy were considered helpful when a patient was sickly. A common complication of trachoma patients is the vascularization of the tissue that invades the cornea of the eye, which was thought to be the cause of the disease, by ancient Islamic physicians. The technique used to correct this complication was done surgically and known today as peritomy. This procedure was done by "employing an instrument for keeping the eye open during surgery, a number of very small hooks for lifting, and a very thin scalpel for excision. This was done by lifting the growth with small hooks and then cut with a small lancet. Both of these surgical techniques were extremely painful for the patient and intricate for the physician or his assistants to perform. The method for treating cataracts in medieval Islam known in English as couching was known through translations of earlier publishings on the technique. After the procedure was complete, the eye was then washed with salt water and then bandaged with cotton wool soaked in oil of roses and egg whites. After the operation, there was concern that the cataract, once it had been pushed to one side, would reascend, which is why patients were instructed to lie on his or her back for several days following the surgery. Before the development of anesthesia and antisepsis, surgery was limited to fractures, dislocations, traumatic injuries resulting in amputation, and urinary disorders or other common infections. Some of these drugs, especially opium, were known to cause drowsiness, and some modern scholars have argued that these drugs were used to cause a person to lose consciousness before an operation, as a modern-day anesthetic would. However, there is no clear reference to such a use before the 16th century. His ideas on medical ethics were divided into three concepts:

Chapter 9 : The Roman Empire: in the First Century. The Roman Empire | PBS

Why was there little medical progress in the medieval period? Why was there little medical progress in the medieval period? Fall of The Roman Empire in the 15th Century.

Acta are believed to have first appeared around B. There was also an Acta Senatus, which detailed the proceedings of the Roman senate. These were traditionally withheld from public view until 59 B. These entitlement programs date back to B. The Romans streamlined the medium by creating the codex, a stack of bound pages that is recognized as the earliest incarnation of the book. The first codices were made of bound wax tablets, but these were later replaced by animal skin parchment that more clearly resembled pages. Ancient historians note that Julius Caesar created an early version of a codex by stacking pages of papyrus to form a primitive notebook, but bound codices did not become popular in Rome until the first century or thereabouts. Early Christians became some of the first to adopt the new technology, using it extensively to produce copies of the Bible. To ensure effective administration of this sprawling domain, the Romans built the most sophisticated system of roads the ancient world had ever seen. These Roman roads—many of which are still in use today—were constructed with a combination of dirt, gravel and bricks made from granite or hardened volcanic lava. Roman engineers adhered to strict standards when designing their highways, creating arrow-straight roads that curved to allow for water drainage. The Romans built over 50,000 miles of road by A. Highways allowed the Roman legion to travel as far as 25 miles per day, and a complex network of post houses meant that messages and other intelligence could be relayed with astonishing speed. These roads were often managed in the same way as modern highways. Stone mile markers and signs informed travelers of the distance to their destination, while special complements of soldiers acted as a kind of highway patrol. The ingenious design of the arch allowed the weight of buildings to be evenly distributed along various supports, preventing massive Roman structures like the Colosseum from crumbling under their own weight. Roman engineers improved on arches by flattening their shape to create what is known as a segmental arch and repeating them at various intervals to build stronger supports that could span large gaps when used in bridges and aqueducts. Along with columns, domes and vaulted ceilings, the arch became one of the defining characteristics of the Roman architectural style. Early Roman calendars were likely cribbed from Greek models that operated around the lunar cycle. But because the Romans considered even numbers unlucky, they eventually altered their calendar to ensure that each month had an odd number of days. This practice continued until 46 B. Caesar lengthened the number of days in a year from to the now-familiar and eventually included the 12 months as we know them today. The Julian calendar was almost perfect, but it miscalculated the solar year by 11 minutes. These few minutes ultimately threw the calendar off by several days. This led to the adoption of the nearly identical Gregorian calendar in 1582, which fixed the discrepancy by altering the schedule of leap years. The Twelve Tables and the Corpus Juris Civilis Subpoena, habeas corpus, pro bono, affidavit—all these terms derive from the Roman legal system, which dominated Western law and government for centuries. The basis for early Roman law came from the Twelve Tables, a code that formed an essential part of the constitution during the Republican era. First adopted around B. Established by the Byzantine emperor Justinian between 529 and 566 A. Along with English common law and sharia law, Roman law remains hugely influential and is still reflected in the civil laws of several European nations as well as the U.S. Under the leadership of Augustus, they established a military medical corps that was one of the first dedicated field surgery units. These specially trained medics saved countless lives through the use of Roman medical innovations like hemostatic tourniquets and arterial surgical clamps to curb blood loss. Roman field doctors also performed physicals on new recruits and helped stem the spread of disease by overseeing sanitation in military camps. They were even known to disinfect instruments in hot water before use, pioneering a form of antiseptic surgery that was not fully embraced until the 19th century. Roman military medicine proved so advanced at treating wounds and promoting wellness that soldiers tended to live longer than the average citizen despite constantly facing the hazards of combat.