Medicine for Managers

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What Have The Romans Ever Done For Us?

The period when the world was governed by the Roman Empire was an exciting time for the development of medicine. Their civilisation will forever be remembered for the recognition that poor hygiene was a constant source of disease and their improvements in public health had a dramatic and major impact on society

Ancient Rome flourished for over a thousand years from about 750BC to about 450AD. Its power extended through Europe, Asia Minor and North Africa. The Romans invaded Greece in about 500BC and by 146BC it had become a province of Rome.

Roman medicine initially drew heavily on what the Greeks before them had learned but, as time went on, the disease and injuries of the Roman military resulted in many important discoveries by the military doctors.

Roman philosophy was that medicine should quite simply be directed to improve the quality of life of the whole population in their empire.

The Greek influence on Roman medicine was huge. After Rome overran Greece, the first Greek physicians in Rome came as prisoners. Over time their skills and talents were recognised and they were freed and many practised medicine in Rome and elsewhere.

Ultimately many Greek doctors actually emigrated to Rome, attracted by the money that they could earn.

When the Romans conquered Alexandria, they discovered Univesrities and Libraries containing a treasure trove of medical information.

They also found many medical scientists and researchers working on theories of illness. The Romans, wisely, allowed them to continue with their research.

Prominent in Greek theory was the concept of the ***four humours***. They were:

- Blood
- Yellow bile
- Black bile
- Phlegm

Advocated by Hippocrates and later supported by Galen, physicians would assess the quality, quantity and balance of the humours to analyse and describe the state of health of their patients.

The theory was that humours existed as liquids, associated with the fundamental elements of earth, air, fire and water. Each humour was linked to a season of the year. Blood, for example, was associated with spring. A good humeral balance was required for a healthy

body and mind and imbalance led to disease. Blood letting became a common treatment for ill-health.

Though widely believed by Roman doctors, there were other conflicting theories and, in many ways, they were well ahead of their time:

- Varro blamed creatures too small to be seen (what a pity he didn't have a microscope)
- Columella blamed poisonous vapours in the swamps (he suspected mosquitoes)
- Crinas of Massilia thought that illness was caused by the stars. Ridiculous? – perhaps but it is well-known that many diseases have unexplained cyclical features.

Roman doctors derived much experience from tending the wounds of soldiers injured in battle and gladiators wounded in the amphitheatres.

Their ability to understand the human body was limited because human dissection was forbidden in the Roman empire, although it was widely undertaken in earlier Greek medical circles.

Roman medicine owes a lot to the Roman physician Galen, more correctly known as Galen of Pergamum (Turkey) who was born in 130AD.

He was a Roman anatomist who became the chief physician at the gladiator school, gaining much wound experience.

He moved to Rome and became physician to Marcus Aurelius and his successors. He originated experimental medicine dissecting animals to understand anatomy and physiology. He realised that urine is made in the kidneys and that arteries carry blood (though he failed to grasp the concept of circulation). He experimented on pigs and found, by cutting the spinal cord at different levels, how the nervous system carries impulses between the brain and muscles.

Although most of his work was done on animals he did dissect hanged criminals and bodies washed out of a cemetery during floods.

He wrote prolifically, compiling treatises which contained all significant Greek And Roman medical thought and belief, to which he added his own findings and theories.

He died in 210AD. His theories were a source of great influence on medicine for fifteen centuries after his death.

His skill as an anatomist, physician and archivist resulted in a vast expansion of medical knowledge although many of his hypotheses were flawed. They remained in the folklore until they were refuted two to three hundred years ago.

The Romans discovered many medical treatments:

- Fennel for nervous disorders
- Egg yolk for dysentery
- Garlic for heart ailments
- Unwashed wool for skin sores (often dipped in honey and applied directly)
- Silphium as a contraceptive
- Willow as an antiseptic.

They may sound fanciful but many provided the foundations for modern medication.

They also used the pharmacopoeia of the Greek pharmacologist Dioscorides (c. 40-90AD) who wrote a five volume encyclopaedia *'De Materia Medica'* also used by doctors extensively for 1,500 years.

They developed surgical skills too. Roman surgeons carried out procedures using opium and scopolamine for pain relief and vinegar to clean wounds.

They also had midwifery instruments (although rather basic and frankly barbaric). They carried out Caesarean sections; babies were delivered but the mother invariably died.

The foundations of many surgical procedures were put in place by the Romans including techniques for drainage of pus, removal of dead bone, elimination of foreign bodies, amputations and post-operative recovery programmes.

The Romans also introduced hospitals. They started as groups of tents behind battle-lines to care for wounded soldiers but, over time they were constructed of standard building materials and wards and individual rooms were provided for patients to receive care.

Family and physicians would attend the patients. Later they became larger, more airy and very clean and would be cited in a quiet part of the city near the outer wall. In addition, they developed the ***valetudinarium,*** a legion hospital building which was rectangular with four wings, used for triage.

It included a short-stay ward, dispensary, kitchens, staff quarters and washing and toilet facilities.

Perhaps their greatest contribution to health and medical development was their recognition of the importance of public health and hygiene. They understood that hygiene and cleanliness

was essential to prevent the spread of disease. In the great sanitary Roman catalogue were included public baths, sewerage systems, toilets and cleanliness regimes. At the height of the empire, the philosophy of a healthy mind and a healthy body were strong tenets. ***Celsus* said:**

> ***"****A person should put aside some part of the day for the care of his body. He should always make sure that he gets enough exercise, especially before a meal".*

Public Baths were a key feature of the Roman Empire. There were nine in Rome alone, all maintained to the highest standards and of varying temperatures, heated by under-bath chambers using hot air. Some of them had gymnasia and massage rooms.

The Roman senate was very strict about the standards and engaged bath inspectors to ensure that they were maintained. The baths were used by rich and poor. Most Roman settlements had baths.

In Britain to best known are at Bath (called *Aquae Sulis* by the Romans). The price of entrance to the baths was extremely low (about one-sixteenth of a penny) to ensure that no-one was excluded from the baths on the grounds of cost.

Water Supplies. The Romans understood the significance of clean water. The great Roman architect ***Vitruvius said***: *"We must take great care in searching for springs and, in selecting them, keeping in mind the health of the people"*. Cities and towns were built away from any swamps and near springs and flowing rivers. They developed systems for moving water long distances using conduits, tunnelling where necessary through hills and crossing valleys with aqueducts. On arrival at destinations, the distribution of water was achieved using lead piping and sometimes bronze pipes where they were visible. The water supply in Rome was impressive and it is estimated that the aqueducts carried a billion litres of water a day. They paid attention to water throughout the empire because of the need to ensure that the soldiers, who maintained the security in occupation, were well.

Toilets

The Romans also developed toilets both inside larger houses and in the streets. They were not the first to do so, but they refined the state of the sanitary ware. It is said that, by about 300AD Rome had 144 public toilets flushed clean by running water (UK cities please note). There were effective sewerage systems. ***Pliny*** wrote that many Romans heralded the sewerage system as their greatest achievement. The military hospitals had effective drainage and sewerage systems as part of the programme to ensure that the injured soldier would quickly recover in a hygienic environment.

So, the Romans did a lot for us in providing the foundations for many aspects of modern medicine. Much of what they recognised as good practice was lost during the dark ages and not re-introduced until the nineteenth century in the United Kingdom. Think 'Roman' next time you see a forceps, a scalpel or a catheter.

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