

## PAEDIATRICS: THE INDIVIDUALS AND EXTERNAL INFLUENCES INVOLVED IN FORMING THIS SPECIAL BRANCH OF MEDICINE, FROM HIPPOCRATES TO THE PRESENT DAY\*

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### INTRODUCTION

The care of the child began its existence as a task undertaken solely by the mother. This care would consist of warding off evil spirits with charms and incantations, or trying to cure ailments with simple herbal remedies. It was not until the time of Hippocrates (who began an era of clinical observation and scientific thought) that medicine began to expand and progress into something more than just a philosophical and astrological art. This included attempts to explain diseases specific to childhood and recognising that there are features that present solely in the young.

The aim of this account is to follow the development of paediatrics since antiquity. The term paediatrics is used loosely, since both the word and the speciality did not actually come into existence until the middle of the nineteenth century. The thoughts of Professor RE Olver (outlined in an informal interview) on where he sees the speciality advancing in the future have also been included. It must be added that there are many different cultural and social aspects that undoubtedly have played a major part in moulding the progression of the study of child health and medicine in general; indeed, the development of civilisation encompasses these. Clearly, to include all these factors is impossible within the confines of this paper.

### ANTIQUITY (500 BC to AD 500)

Children were not the main interest of ancient medical authors; however, diseases of children were recognised. Hippocrates (460–370 BC), was the first to refer in his writings to features of diseases as they appear in children and one of his treatises is specifically on a period of childhood – the teething stage. A strange notion of antiquity which Hippocrates developed is the theory that a human life can be looked at in periods of seven. For example, in seven days the fetus has grown all the essential parts of the body; a seven-month-old child has a better chance of survival than an eight-month-old child; the first period of dentition is over at seven years.

Some 450 years later, early in the first century AD, Cornelius Celsus of Rome wrote his *De Medicina* which, although it contains only a few paragraphs on children, recognises that ‘children require to be treated entirely different from adults’.

Soranus of Ephesus (AD 98–117) gives a remarkable, comprehensive account covering many childhood themes, including the care of the baby, feeding, rashes, tonsillitis,

wheezing and cough. He has also been credited with the first reference to rickets in medical writings.<sup>1</sup> Claudius Galen (AD 131–201), court physician to Emperor Marcus Aurelius in Rome, produced over 100 treatises on many aspects of medicine, one of which is entitled *How to preserve the health of a normal infant, and an answer to those who assert that infants should have a drying regimen*. He generally describes much of what Soranus had already written, and at times criticises his predecessor’s views. He also refers to astrology and opposes some current theories on childcare.

Over the next century no great contributors to paediatrics emerged. Rhazes of the Arabian School (AD 850–932), known as the ‘Galen of his time’, showed a particular interest and wrote a small treatise dealing with the diseases of children (not with the care of infants).

### THE RENAISSANCE PERIOD (1453–1600)

The invention of printing in the middle of the fifteenth century provided a medium through which to spread knowledge in a quick and efficient manner. The first printed medical treatise on the diseases of children was by the Italian, Paulus Bagellardus (?–1494), in 1472. In this, he refers repeatedly to previous authors, including Rhazes, and also offers his own opinions and experiences. Similar volumes appeared soon after by the German, Metlinger and Roelans of Mechlin (Belgium).

One of the most famous works on midwifery of this period, Roesslin’s *Rosengarten*, was published in 1512. This book combined midwifery and diseases of children. Thus far, there have been no paediatric developments in Britain, but in 1545 the first English paediatric treatise appeared, *The Boke of Chyldren* by Thomas Phaer (?1510–60), ‘a name to be remembered and had in honour by all who are interested in the progress of the care of the sick child in this country’.<sup>1</sup> Phaer, a scholar at Oxford, was a physician, poet, lawyer and translator; his book echoed the Greek/Roman/Arabian writers, but disseminated these thoughts to his English colleagues.

During this period few actual advances in the study of childhood diseases were made and the concept of clinical observation was minimal; however, many important afflictions of childhood, such as syphilis, typhus and whooping cough, were reported on, and the concept of cow’s milk as a replacement for breast milk was introduced.

### THE SEVENTEENTH CENTURY

This century brought us the great historical figures of Shakespeare, Molière, Descartes, Rembrandt, Bach and Newton, but it was also notorious for its cruelty to children.<sup>2</sup> The founding of the St Vincent de Paul charity was a response to this. Although paediatrics was still not a speciality, there were several accounts published on childhood diseases. The Englishman, Daniel Whistler (1619–84), produced the first detailed description of rickets

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in 1645 but this was superseded by an apparently more important account of rickets and scurvy, *A Treatise of the Rickets: Being a Disease Common to Children*, produced in 1651 by Francis Glisson (1597–1677). The latter interestingly ignores Whistler's earlier writing, stating in his opening paragraph that 'this is absolutely a new disease, and never described by any of the ancient and modern writers . . .'.<sup>3</sup> Glisson was President of the Royal College of Physicians of London, 1667–9.

Several more works were published; of note is that of James Primerose, who still regarded the antiquarian medical writers as the 'Law and Prophets', for example, quoting from Galen and Hippocrates on the subject of rickets, but not once from Glisson. This illustrates the reluctance of physicians at this time to move away from ancient ideas and to move forward, making their own observations.

#### THE EIGHTEENTH CENTURY

More progress was made in child health, in particular due to Nils von Rosenstein (1706–73) of Sweden who, in 1752, wrote a systematic treatise on the treatment of infants and children and thus laid the foundation of paediatrics as a speciality.<sup>4</sup> Britain produced two great physicians with a particular interest in child health – William Cadogan and George Armstrong. Cadogan (1711–97), an army surgeon who became a Governor of the Foundling Hospital of London, made a reputation for himself with his *Essay upon Nursing and the Management of Children from their Birth to Three Years of Age*, first published anonymously in 1748 but in later editions under Cadogan's name. It strongly advocated aspects of care that seem obvious to us now, such as loose clothing instead of the tight swaddling of the past and maternal nursing starting from within a few hours of the birth instead of waiting several days.

George Armstrong (?–1789), a Scot, made two significant contributions to paediatrics. His *Essay on the Diseases Most Fatal to Infants* in 1767, and the establishment of the first ever paediatric hospital in England, The Dispensary for the Infant Poor in London in 1769. This was a recognition of the practical needs of sick children and was the only institution where children were accepted without letters of admission. Despite the vast numbers of patients that passed through the hospital (35,000 in 12 years) and the humanitarian efforts of Armstrong, lack of finances caused its closure in 1781. This closure also ended the first clinical paediatric teaching undertaken in England. The present day Great Ormond Street Hospital for Sick Children is only a stone's throw away from the old site of this Dispensary.

American paediatrics in this century was remarkable for original descriptions of diseases (such as hydrocephalus and diphtheria).<sup>2</sup> The prominent, and maybe the greatest, American clinician of his time was Benjamin Rush (1745–1813) who wrote a thorough paper on the causes and cure of cholera.

#### THE NINETEENTH CENTURY

In nineteenth-century Europe, the Frenchmen Charles-Michel Billard (1800–32) and Ernest Bouchut (1818–91) were major contributors: Billard's text was the first to classify children's diseases, for example, those of the 'digestive apparatus', and not simply as symptoms. Bouchut wrote several important books on paediatrics, one being on the

causes of infantile mortality. Eduard Hensch (1820–1910) of Berlin is said to have initiated the modern concept of paediatric teaching in his *Lectures on the Diseases of Children* (1881) and described abdominal purpura in the young.

In Britain, more physicians devoted most or all of their time specifically to child health. Names to note are Charles West (1816–98) and Sir George Frederick Still (1868–1941) of London and John Thomson (1856–1926) of Edinburgh. West, having trained all over Europe, started in obstetrics but became one of the most acclaimed paediatricians of his time. In 1852, he established the Great Ormond Street Hospital for Sick Children, a magnificent feat considering the major and variegated opposition. He was physician-in-chief at this hospital until he retired in 1875. George Still, professor of paediatrics at King's Cross and physician to Great Ormond Street, made many valuable contributions to paediatrics. He made his mark by his original description of childhood arthritis – Still's Disease. Thomson, also of worldwide fame, was involved in much research and his textbooks were in demand throughout the world.

Medicine in America was thriving and progressing at great speed. Paediatrics became a speciality under the influence of Abraham Jacobi (1830–1919), a German who, having escaped his native country because of his involvement in the revolution of 1848, arrived in New York in 1852. In 1860, he opened the first children's clinic in New York, his title being 'professor of infantile pathology and therapeutics'. He also played the main role in establishing a section of the American Medical Association on paediatrics in 1880. Another pioneer of American paediatrics was Job Lewis Smith (1827–97), a physician to many hospitals and a professor of paediatrics in one, practiced in New York City for over 50 years. His textbook, *A Treatise on the Diseases of Infancy and Childhood*, published in 1869, passed through eight editions and was a favourite among both students and physicians.

Children's hospitals were established in Europe and America from the middle of this century. The first in England was The Liverpool Infirmary for Children in 1851 with Great Ormond Street Hospital for Sick Children and The Royal Manchester Children's Hospital opening in the following year. In Scotland, the first was The Royal Edinburgh Hospital for Sick Children which opened in 1860 – many more followed. Initially, these hospitals were staffed by general physicians, but full-time paediatricians were slowly but surely being appointed.

#### THE TWENTIETH CENTURY

The major influences of this century on developments in paediatrics were the two world wars. The outbreak of WWI did a lot to hinder the future of British paediatrics – for instance, it put a halt to the 'Preposterous Club', a body of paediatricians and obstetricians whose ideas are routinely quoted today. Child welfare was the main development between the wars, when poverty and deprivation were rife welfare services introduced on a national scale, mainly and from the passing of the Maternity and Child Welfare Service Act of 1918. Despite the Industrial Revolution of the nineteenth century and the misery it brought with it, infant mortality rates fell in the twentieth century; the number of full-time paediatricians increased and large general hospitals developed paediatric units. In 1928, the British Paediatric Association was born, and it has played a major

role in the growth of modern paediatric thought. Despite these advances, paediatricians were not as well recognised as their colleagues in other specialities and struggled to earn a living. 'I well remember, on deciding to embark on a paediatric career in 1937, being taken aside by a successful worldly physician of this city and asked if I were mad.'<sup>5</sup>

The organisation of child health services has changed in that GPs now provide in the community the services that were once the concern of hospital paediatricians. These services include health education, surveillance of growth and development and immunisation. It is not uncommon for GPs to sit the Diploma in Child Health.

A new concept to this century is the requirement of continuity of care into adolescence and young adulthood, as many children with previous fatal diseases now survive. The pattern of acute care has changed in that the length of stay of a child in hospital has shortened, although more children are being hospitalised.

#### THE FUTURE

The definition of the human genome will have many benefits in medicine, but in paediatrics antenatal diagnosis, in particular, will be refined. Gene therapy will also have an increasing role in the treatment of disease. Further and safer immunisations will certainly become available. The further understanding of the aetiology and mechanism of diseases, such as the leukaemias, will be established and lead the way to developing increasing numbers of cures.

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