Medical Specialisation at the London Hospital

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The Great Awakening

By

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This book is dedicated to my teachers, my patients and my students and colleagues, from all of whom I have learnt so much

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PREFACE

Certain special skills, such as cutting for bladder stone, couching for cataract and the use of urinary catheters for prostatism were historically early solutions to common and intractable problems, although at first with uncertain success. But these were early examples of specialist practice. Technical developments in more recent times have introduced new techniques that have required special skills, leading to a shift away from generalist practice toward specialized work, supported by specialist medical and scientific societies. There was initial resistance among established practitioners that this would restrict the scope of their practices, thus affecting their income as well as the basis of their medical work. Specialist practice was opposed even in the teaching hospital environment, sometimes vehemently. Unusually, at the London Hospital the medical staff, supported by innovative nursing ideas and, especially, by the enlightened management policies of the Chairman of the Board, Viscount Knutsford, in general, embraced specialism, despite fears about cost, bed restrictions, and the need for special facilities. Some specialties, such as medical imaging and laboratory facilities, soon proved essential in this development. Although specialisms evolved through individual expertise, growing reputations, and new concepts and innovations, the crucial step was the establishment of full departmental status, which conferred inter-related benefits to patients and to the hospital, its staff and students. Medical specialism has become a major factor in modern medical practice, that is continuing to evolve. It offers a solution to the unresolved contemporary debate regarding the organisation of hospital and family practice that ought to have a profound effect on the future of medical practice, whether in a state-sponsored system such as the NHS or in a mixed state and private or insurance-based system. Although it has barely yet entered thinking in a family practice setting it is also relevant to the future of general practice in Britain; and it will become an increasing prerogative as patients themselves become more aware of the value of specialist skills in their diagnosis and treatment. In this book the factors leading to the development of specialty practice are described by focussing on the 250 years of experience at the Royal London Hospital.

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This book arose through recognition of the international role of the London Hospital in medical and surgical developments in the century 1850-1950. In understanding this I have been guided by my teachers and supervisors in London, in Charlottesville, Virginia in Bath, Somerset, and then in Cleveland, Ohio; St Louis, Missouri and Boston, Massachusetts. I must also record helpful discussions with colleagues in the University Neurophysiology Departments in Uppsala and Linkoping, Sweden. The Archives of the Royal London Hospital and St Bartholomew's Hospital are especially rich and the several Hospital Archivists during many years have been enormously helpful. I have also used the library of the Royal Society of Medicine to supplement material collected over many years of bibliophilia in my personal library. I have benefited also from visits to the Royal College of Surgeons in Edinburgh, and from discussions with many learned colleagues in European centres, in Britain and in the USA. To all of these people and sources, too many to enumerate, I am most grateful. The illustrations I have used have been all provided by the Barts NHS Trust Archives and are reproduced with permission.

INTRODUCTION

The foundation of the London Hospital, known since its 250th anniversary in 1990 as the Royal London Hospital, is well-documented in the remarkable and virtually complete records held in the Royal London Hospital Archives. These are now held jointly with the archives of St Bartholomew's Hospital, and several other collections of hospital archives, in the Great Hall at Barts in the City of London and in the Medical School Library and Museum, at the Royal London Hospital in Whitechapel. This collection enables one to reconstruct some of the thinking behind the development of specialty practice in a period when this was far from the norm in most hospitals in London or elsewhere in Britain. There was piecemeal development of the different specialties based on the requests received from different members of the staff over a period of many years. One of the many hurdles to be overcome in setting up a Specialty Department concerned the need for senior staff with similar specialty interests to facilitate working together, in contrast to their previous established practice of working entirely individually, according to their own well-tried principles. In the main this seems to have been accomplished relatively easily, perhaps due to a determination to take advantage of the hospital's investment and the mutual cover arrangement of responsibilities associated with the establishment of a specialty department. In the beginning these new specialty departments were quite small by modern standards, with two or three consultant staff, nursing support, perhaps associated non-medical technical assistance e.g., in ophthalmology, and with other close professional relationships such as with radiology or bacteriology recognised and supported by management. The opportunity to involve medical registrars in training positions was also recognised. Almost all these newly established specialty groupings flourished, developing specific referral patterns and initiating unique advances in medical and surgical practice. These aspects of medical practice in the decades 1890-1940 were much discussed in the London Medical Societies, where resistance to the concept was strongly held by those with established private practices in Harley Street, a resistance that was carried through to the organisation of their hospital appointments. The long-established ideologies of the general physician and general surgeon proved particularly resistant to change, a debate that was unresolved even as recently as the 1970s when the Royal College of Physicians supported the appointment of general

physicians ‘with an interest in a specialty’, as for example, neurology or cardiology. This was a response to the need for specialist expertise in smaller district hospitals located at a distance from the major teaching centres, a problem that has been resolved more recently by the appointment of consultant staff in university hospitals with responsibilities also in a district hospital, thus requiring out-patient and probably in-patient duties at the district hospital, as well as in the central institution. The idea that any individual physician or surgeon can be competent in the whole field of the art has been effectively negated by modern developments. And for a physician ‘to have an interest’ in a major specialty is an outmoded concept that implies a reduced standard of competence in their specialty work.

In this book the gradual and often rapid changes in practice that facilitated the development of specialist skills in clinical practice can be followed as they were experienced at the London Hospital. During the first decades of the 20th century the London led the way in Britain in the application of these concepts. Further, its contemporary merger with St Bartholomew’s Hospital has marked a tactical change in critical mass of staff and patient activity that is already bearing fruit in better clinical care and in encouraging research in many different areas of medical science. Sir William Osler, in an opening address “Specialists and Specialisms” given in 1910 to the Ophthalmological Congress held in Oxford in July of that year, commented that “to have seen a new birth of science, a new dispensation of health, reorganized medical schools, remodelled hospitals, a new outlook for humanity, is not given to every generation”. He clearly recognized the magnitude of the changes that were underway, as perhaps few others did at that time. As he remarked in that address “specialism is here, and here to stay”. It continues to develop.

PART 1

EARLY HOSPITAL PRACTICE

CHAPTER 1

THE LONDON HOSPITAL: THE EARLY YEARS

The foundation of an institution is often shrouded in myth. However, the foundation minute of the London Hospital, recording the first meeting of its seven Founding Gentlemen on 23rd September 1740, is preserved in the file of Governors' Records, bound in its original green Morocco leather, held in the hospital Archives. Meetings of the Court of Governors and the House Committee continued without interruption for more than 200 years until 5th July 1948 when responsibility for management of the Hospital was taken over by a new entity, the National Health Service (NHS). Until then the London Hospital had functioned as a voluntarily funded institution, working for the benefit of the people of East London. In accordance with this tradition, the hospital's income was derived entirely from subscriptions and donations, and its medical staff were all appointed on an honorary basis. The change to a government funded NHS in 1948, in which doctors were contracted as employed personnel, was disruptive and abrupt, and not universally welcomed, although it was generally perceived as inevitable and necessary. It enshrined the introduction of universal health care, free at the point of care, in Britain.

The Seven Founders in 1740 were Mr John Sneeson, Mr Sclater, Mr Fotherley Baker (a lawyer), Mr G Potter, Mr John Harrison (surgeon), Mr Josiah Cole (apothecary), and Mr Shute Adams (druggist). They agreed to found an Infirmary on the basis that subscriptions had already been promised *"to compleat the sum of 100 guineas"*. That first meeting of the Founders took place in the Three Feathers Tavern, Cheapside, in the City of London, a source of amusement to generations of medical students who recognised the appropriateness of such a beginning, meeting in a tavern, in relation to their own traditional amusements. The Madrigal Society, thought to be one of the oldest musical societies in Europe, founded in 1741, was using the same tavern for its meetings in 1769, so it must have had suitable facilities for private meetings. Mr Harrison, the surgeon, had already obtained a short lease of a suitable house in Featherstone Street, adjacent to

the Honourable Artillery Company's premises in the northern part of the City of London. The London Infirmary opened its doors there, with 30 beds. The Three Feathers tavern no longer exists, and the house in Featherstone Street likewise has long since been replaced by modern residential and commercial buildings. Featherstone Street is located close to the burial ground at Bunhill Fields, the final resting place of Daniel Defoe, Jonathan Swift, William Blake and John Bunyan among several thousand others. The emblem of 'three feathers' has been used by the hospital as its heraldic identification for more than 250 years.

A week after the foundation meeting, a second meeting of these newly constituted Governors of the London Hospital, its name already changed, was held at another hostelry, the Baptist's Head Tavern, Aldersgate Street. On this occasion, it was agreed that Mr John Harrison (1693-1776), Surgeon, should be joined on the staff by Dr John Andrée (1698-1785). Dr Andrée had graduated MD from the University of Rheims in 1739 and had been admitted as a Licentiate of the Royal College of Physicians in 1741, thus qualifying him to practise as a physician in London. He became the Hospital's first physician. At the same meeting, Mr Josiah Cole, like Mr Harrison one of the hospital's founders, was formally appointed as Apothecary to the hospital. John Harrison had himself obtained the freedom of the Barber Surgeons Company (founded in 1540), having been apprenticed to Mr James Ferne, a surgeon at St Thomas's Hospital, which was then located at its original site, close to the Thames in Southwark, near London Bridge. Clark-Kennedy (1893-1985), in his history of the London Hospital as a voluntarily funded institution, published in 1962,[1] considered that Harrison is likely to have worked and studied entirely in Mr Ferne's practice during his apprenticeship, rather than at St Thomas's Hospital itself.

These three newly appointed medical staff were required to attend the Hospital between 8.00am and 10.00am in summer and 9.00am and 11.00am in winter. Arrangements were made to record *"the Names of Patients, their Business and Place of Abode, Disorder, the Issue of the Case, and the Name of the Subscriber who sent them in a book kept for the purpose, and open for inspection of the Subscribers as often as they shall think proper"*. At the hospital's opening there was only one shilling at the bank (less than 10 pence in modern currency, but with spending power equivalent to about £10 in 2018). Publicity, seeking as many as 2000 subscribers, was initiated. In the 18th century, patronage of the nobility, *"Persons of Quality and Distinction"*, and city merchants and bankers, was essential for any

charitable institution. Accordingly, John Harrison had interested the Duke of Richmond in the venture. Interest in the new hospital proved popular, and a category of subscribers was introduced, each subscriber being required to pay the substantial sum of 5 guineas per annum. Subscribers were entitled to certain privileges, especially the right to introduce a sick person for treatment at the hospital, but it was agreed that emergency cases could be admitted without sponsorship from a subscriber. The apothecary, Mr Cole, being competent in midwifery, agreed to treat maternity cases, but only as out-patients.

Within months, however, the premises in Featherstone Street proved too small and the hospital moved to a house in Prescott Street, just south of Goodman's Fields, the lease having been engaged by Mr Fotherley Baker in Mr John Harrison's name. Goodman's Fields is located a little to the east of the Tower of London. Like the Tower it lies outside the boundary of the City of London. In modern times the field enclosed within the square of houses has been built over for school premises, but many of the surrounding and adjacent residential houses still survive from the 18th century. In a series of meetings of the London Hospital Court, the arrangements for running the new hospital were now organised more formally. Furniture was purchased, money was spent on candles, firing for cooking and heating, repairs, soap, stationery and wages, and rooms were set aside for the use of the three staff, and for a manager. A treasurer was employed. The Apothecary was salaried but the Physician and Surgeon in the usual manner of the time and, indeed, until the advent of the NHS in 1948, gave their services gratis. Attendants were engaged to help in the care of patients, and to prepare food and manage laundry. A porter was appointed and provided with an appropriate uniform and a ceremonial staff.

The support of the subscribers was essential in underwriting this new concept, and efforts were made to secure new subscribers for the infirmary with the aspiration *"for Charitably relieving Poor Manufacturers, Sailors in the Merchants' Service, and their Wives and Children, with Medicine and advice in case of Sickness or Accident, for the Assistance and promoting of so laudable a design We Do Subscribe the Sums opposite to our respective Names."* An Apothecary's shop in Goodman's Fields was purchased and Mr Cole was charged with setting it up and arranging for one of the Apprentices to run it. A weekly House Committee meeting of Governors, elected from the subscribers, monitored the daily work of the hospital and reported on the activity of the hospital to the whole number of the Governors quarterly. Since the whole number of Governors was unrestricted,

determined only by the number of those subscribing, these meetings were soon large and difficult to manage. The House Committee therefore appointed two Visitors to inspect the House twice each week and to report to the elected Committee of Governors. These arrangements proved robust and continued for 200 years, until superseded by the advent of the NHS in 1948.[2]

However, a problem soon arose from the many requests for admission emanating from the subscribers' privileges, perhaps a major attraction of the subscription system. It was therefore decided that only one patient could be recommended for admission at any one time by each subscriber, although any number could be treated as Out-Patients. Acute cases, and accident cases were to be admitted as necessary, by day or night, but other patients were admitted only after they had presented themselves, with a Governor's letter, at a weekly House Committee meeting, where their cases were assessed by both Medical Staff and Governors. Despite these arrangements the Governors accepted that the local poor could petition for admission on payment of a penny, without a Governor's recommendation. Careful enquiry was made of such individuals to avoid fraudulent behaviour by those attempting to evade the charge despite ability to pay for their care. Discharged patients were required *"to return thanks to the Committee and to their benefactors"* by attendance at the weekly House Committee. They were also exhorted to attend their Parish Church *'to give thanks for their care to Almighty God'*. Failure to attend and thank the House Committee in person resulted in entry onto a blacklist of offenders. A system of formal hearings and judgments concerning complaints made by patients to the House Committee was soon in place. Indeed, the arrangements for nursing, catering, and for the assessment of conduct disputes, occupied a major part of the Committees' weekly deliberations.[3]

18th century life in London and later

It is important to recognise that, from its foundation, the London Hospital was established to provide care for those with few resources, in most cases without charge. Although, in the mid-eighteenth century, the ability of the hospital and its staff to provide effective care was constrained by the limited level of medical knowledge, the hospital nonetheless fulfilled an evident need. There was a continual requirement for funding, and this depended on voluntary donations. In modern terms, a fund-raiser was required.[3]

The London Hospital was one of several new hospitals founded in London at this time, during a period of relative national prosperity associated with industrialisation, expanding trade relations abroad, especially with the West Indian sugar plantations and the well-established 13 North American colonies, colonies in Lower Canada and the burgeoning East India Company's activities in India. The slave trade,[4] focused on the Atlantic crossing from Africa, was important in initiating much of this economic activity, by providing labour for the sugar plantations of the West Indies, as described by Jane Austen in her novel Mansfield Park,[5] and for the cotton growers of the southern American colonies. Although British slaving ships were in a minority among those of other European nations, investment in slaving to provide a workforce for these new colonial industries was widespread in Britain as shown by the lists of claimants for compensation when slave ownership, as distinct from transportation, was abolished by Act of Parliament in 1834. The business of transporting enslaved people had already been abolished in Britain in 1807 by Act of Parliament. Indeed, the Royal Navy was under orders to intercept slave ships, sailing under any flag, after 1807 and to take their human cargo to freeports, where they would be released.

In contrast to these, to modern eyes, conflicted interests, there was growing recognition in the late 18th century of the need to develop worthy charitable endeavours, especially associated with the harsh conditions endured by the poor in the major cities, as so graphically exemplified in the drawings of Rowlandson. The industrial revolution in Britain, by this time rapidly developing, led to migration from the countryside to the towns, where there was work, although the hours were long and included child labour, and where living conditions were very poor, often without clean water and with inadequate sanitation. In addition, education and the opportunity that this afforded, was generally available only to the relatively well-off, for example, the landed and professional classes, the new industrialists, and City lawyers, bankers and businessmen.

In developing a new hospital in the 18th century and enlarging it in the 19th century it was essential to have the support of people of influence. Early Governors of the London Hospital included City dignitaries as well as persons from fashionable London Society. This sponsorship encouraged donations from others as well as from the Governors themselves. For example, Benjamin Franklin, the American Representative to the Court of St James, a well-known figure in London society, was a Governor of the London Hospital in the 1780s, and Frederick Handel wrote a short ode for

a fundraising occasion; sadly, the latter has been lost. Miss Nightingale was appointed as a Governor in the mid-19th century, and her advice was often sought in matters beyond nursing. Prominent local businessmen, including multiple generations of the many East London brewing families, the Truman, Charrington, Paulin, Mann, Hanbury and Buxton families, funded wards named in their families' memory, and shipbuilders and commercial business people involved in import/export businesses, and bankers and investors in the City of London and the London Docks became supporters of the hospital, not least because they sought to ensure the welfare of their workers and their workers' families.[1-3]

Despite various inevitable financial vicissitudes, the hospital flourished. It soon relocated from its second site in Prescot Street, not far from the Tower of London, to a greenfield site in Whitechapel consisting of a farm with land that extended southward toward the river Thames.[3] This farm, owned by the Corporation of the City of London, was initially leased but the land was later purchased freehold by the Governors of the hospital. This farm still comprises the estate of the Royal London Hospital. Across its frontage was a country road, now the Whitechapel Road, the principal thoroughfare from Stratford, rural Essex and Hertfordshire into the City, along which passed horses, carriages, coaches, traders of every description, and Royal Mail and military traffic. Farmers brought their produce and animals for sale in the vegetable markets of Covent Garden and the meat markets of Smithfield, then both located in the square mile of the City of London. Goods unloaded from ships in the London Docks, passed mainly along the Commercial Road, immediately adjacent to the southern border of the hospital estate. The Whitechapel Bell Foundry, built in 1570 on a site close by on the Whitechapel Road, had manufactured bells from as early as 1420. It closed only in 2017, as the area began to redevelop with new commercial interests, but this historic site is to be preserved. A large Mosque has been built close to the Bell Foundry which, abutting a small, long-established synagogue, meets the needs of Muslim immigrants from Bangladesh, Pakistan and elsewhere. The Gunmakers Hall, located at Proof House on the Commercial Road close to its junction with Aldgate, just outside the City walls as defined by the Roman wall, was founded in 1637. Since 1675 it has been a City Livery Company but because of its use and storage of gunpowder, it was considered too risky an enterprise to be allowed to locate within the City itself. Aldgate itself, still an important road junction, marks the main eastern exit from the City of London and the origin of the Whitechapel and Commercial roads. Horse-drawn omnibus routes followed the Whitechapel

road into London itself and modern buses continue to follow the same routes.

The Metropolitan Railway Company's underground railway opened in 1863 using coal-fired steam locomotives. In 1876 Whitechapel station, at first part of the East London Line, was constructed on the northern side of the Whitechapel road, immediately opposite the hospital, so that Whitechapel became connected by rail both to the east and to the west. Large tunnels, needed to manage smoke from the coal-fired engines, were constructed beneath the existing Whitechapel road using a 'cut and cover' method, the tracks coming up into the open air to the side of the roadway to allow stations to be built and for much needed ventilation. The station's location was determined by the established presence of the hospital. This line was converted from steam to electric power in 1905, thus forming part of the Metropolitan and City Line of the London Underground system. A north-south link connects to Lewisham on the south side of the river Thames and extends northward from Whitechapel toward Hackney and Highbury. The Elizabeth line connection, bringing Heathrow to the west and also the eastern suburbs within easy reach of the hospital opened in 2022. The Royal London Hospital is therefore served by train and bus routes, providing easy access for patients, visitors and staff. In association with the development of these transport arrangements, the area around the hospital was rapidly built over and occupied by workshops and other commercial establishments, together with crowded streets of small terraced back-to-back homes for local workers. A long-established street market continues to flourish on the wide pavement opposite the original eighteenth century hospital building. The ancient boroughs of Whitechapel and Tower Hamlets and other older areas such as Shadwell and Poplar, border on the once-busy dockyards and loading bays on the Thames downstream from the Tower of London, Tower Bridge and the Royal Mint. These have now been replaced by modern housing and in Canary Wharf by financial institutions spreading out from the City of London, served by a new automated light rail transport system.

In the 19th century Whitechapel and its neighbouring parishes became populated by successive waves of immigrants; especially Huguenot weavers, who took up residence in Spitalfields, and by Poles, Lithuanians, and Lascars (seamen from the Punjab) as well as others from China and the Far East. In the 19th century there was a diaspora of Jewish refugees from the pogroms of Central and Eastern Europe, especially from the Baltic states that had been overrun by Tsarist Russia, and from Poland. This diverse East London population developed a uniquely rich cultural and commercial mix.

In time, many of these migrant families enhanced their existing skills and developed new commercial abilities. Many moved on to other parts of London, or to other British cities, such as Manchester, Birmingham, Sheffield or Liverpool. Others travelled onward to North America, South Africa and Australia but many settled in London, especially populating the eastern and northern suburbs, where they and their children prospered, gradually becoming acculturated, and contributing enormously to London's business, professional, educational and cultural life. These evolving and renewing populations, with their intense activity in various skilled and unskilled trades, as well as enriching London commercial and cultural life, brought with them medical and social problems, sometimes originating far away from London, such as smallpox, cholera, typhus and typhoid fever with consequent medical difficulties for the economically fragile voluntary hospital system. Tuberculosis was an ever-present threat. At this time there was only incomplete understanding of the microbial basis of these disorders or of their best management, with consequential high mortality during epidemics.

Education, industrialisation and wealth in Britain

An inner-city settlement, dependent on Trade, is much influenced by the financial status of the country as a whole and, particularly, on the available educational opportunities. In Britain, this educational need has long been served by a number of old and well-established grammar schools, for example, Wolverhampton Grammar School (founded 1512), but more widespread educational opportunities, at least for boys, developed only in the late 18th century when the new classes of Midland inventors and Bristol and London business entrepreneurs became wealthy. The older English schools tended to have ecclesiastical origins, such as the King's School, Canterbury (founded 597) and the King's School, Rochester (founded 607) and, in London, Westminster School (founded in the 14th century). Uniquely, Eton College was founded by royal command in the 15th century but was not directly managed by the Church. Christ's Hospital School, founded in the City of London in 1552 by King Edward II, was financed and managed by City Aldermen to provide education for children in the City. It was an instant success. Other 'public schools', mostly founded in the 19th century, accepted fee-paying pupils, all boys, and also often provided scholarship places, using income from donations and invested funds. These boys' schools were traditional in outlook and taught classics, literature, history and Christian religious studies, with classical Euclidean and Pythagorean mathematics.

Although the Church of England was a traditional influence in fostering education and social justice, few such opportunities were available in the 18th century to the poor of the major cities, such as London, Birmingham or Manchester. The emergence of industrialisation as a potent force for wealth and social change was still relatively restricted to the emerging Midland and Northern areas of England, particularly associated with coal, iron, metalwork and jewellery, pottery and cotton technologies, together with the emerging technology of steam power. These new industrialists were themselves often nonconformists who looked for new educational opportunities for their sons and, sometimes, also for their daughters. Most of the Midland ironmasters, for example, had not attended grammar school or University but were self-educated, aided by their nonconformist churches and by mechanics' libraries, set up by local families. Their newly generated wealth required financial management, for which the city of London was as well-placed then as it is now. Capital for financial activity came from land, rentals, mining, iron works, cotton processing and cloth production, and from international and colonial trading. The latter included the immense potential profits made using cheap and slave labour in the sugar plantations in the West Indies, and from cotton in the American colonies.[4,5]

Other sources of wealth were linked to the Army and to the Royal Navy, especially via purveyors of military equipment. In addition, money was sometimes acquired by naval officers and crew as rewards for naval actions. In country areas the traditional source of wealth had always been land and agriculture, but agricultural labourers earned very little and had little educational opportunity until the late 19th century. Although living and working conditions for agricultural workers were usually adequate, this was not so for the labouring classes of London and the other major industrial and maritime cities, where conditions were insanitary and harsh.[1,6] Incomes were low, and employment often transitory. Children worked long hours and their mothers worked in the mills or at home, for example making buttons or nails in Birmingham. There was no fallback support available for the unemployed, and medical and nursing care was unlikely to be available through these meagre family resources but was dependent on the availability of local charities. The London Hospital, in its 1760 building, attempted to fill this medical need as the capital city expanded eastward.

Hospitals in eighteenth century London

At the time of the London Hospital's foundation in 1740, there were two ancient hospitals in London providing care in a general context; St Bartholomew's Hospital and St Thomas's Hospital.

St Bartholomew's Hospital

St Bartholomew's Hospital[7] has a long and proud history as the oldest extant hospital in Britain. It holds a special reputation in the City of London and in British medicine. It was founded in 1123 by the Augustinian monk Rahere with the support of King Henry I, in response to a revelation experienced by Rahere in a dream while he was ill with fever in Rome. On his recovery and return to London Rahere founded the Hospital and the Priory of St Bartholomew. The latter is still represented in Smithfield by the churches of St Bartholomew the Great, where Rahere is buried, and St Bartholomew the Less, attached to the hospital gateway. A Carthusian monastery, founded in 1371, was built on land close to St Bartholomew's the Great. This monastery was closed and partially demolished, as were the priory and St Bartholomew's the Great itself, in response to Henry VIII's dissolution of the religious houses in the period 1534-1547. St Bartholomew's the Great, the only remaining Norman parish church in the City of London, now consists only of the choir and part of the crossing of the original building. The surviving parts of the priory buildings, now known as the London Charterhouse, have served since 1611 as an Almshouse for 80 pensioners, until recently all men, and still known as Brothers. The Charterhouse School, founded at the same time, moved out of London in the early 20th century.

From its foundation, St Bartholomew's Hospital, initially quite small, was dedicated to the care of the sick poor, free to those admitted. It continued in this role from its foundation, but barely survived the major loss of income that occurred after the dissolution of the monasteries. The Hospital was re-founded in 1547 following an appeal to King Henry VIII by the Lord Mayor of London, Sir Thomas Gresham. Gresham, a far-sighted financier, left money in his Will to establish Gresham College (1519-1579, founded in 1597 in his house, to provide high-level education within the City of London with an emphasis on scientific subjects, that were not then taught at Oxford or Cambridge. As part of its second, royal foundation, St Bartholomew's Hospital was placed formally under the resource and management of the

City of London, thus no longer dependent on a religious foundation for funding.

The turmoil caused by the dissolution of the monasteries and other religious foundations[6] resulted in closure of many of the hospices managed and funded by those institutions. New organisations were therefore needed to manage the care of the poor in the City of London. At St Bartholomew's a system of Governors was instituted, including the retiring Lord Mayor himself, with four Aldermen and eight Common Councillors. The City's Senior Alderman was appointed President of the Board of Governors. This system of management at Barts[7] formed a pattern followed in the subsequent arrangements for the organisation of many other hospitals, including the London Hospital. At the London this was key to the flexibility and success in later decades. At Barts there were eight Beadles, and a Clerk to administer the hospital (the forerunner of the Chief Executive). An almoner was appointed to organize admissions and discharges and manage payments for services rendered from those with sufficient means. A Priest in Holy Orders looked after the spiritual needs of the patients, and four surveyors were appointed to manage property owned by the hospital, with a Renter Clerk whose duty it was to collect rent from these properties. Barts was therefore well-endowed in terms of income from its capital resources. A Matron supervised eleven nursing sisters in caring for patients and feeding them. A Steward was responsible for obtaining provisions and other necessities. The Porter managed the gate of the hospital, keeping out vagrants and maintaining the precincts in good order. The hospital itself was staffed by three surgeons and one physician, supplemented from 1567 by an apothecary. Out-patients attended once weekly. The Governors formally inspected the hospital annually. Dr William Harvey (1578-1657), educated in Padua and renowned as discoverer of the circulation of the blood, was appointed as a Physician in the 17th century. Other notable medical staff at Barts in the 18th and 19th centuries were Sir Percival Pott (1714-1788), John Abernethy (1764-1831) and Sir James Paget (1814-1899). There were close personal and professional relationships between the staff at the London and those at Barts, especially that between Blizard at the London and Abernethy at Barts.

Major changes at Barts occurred in the first decades of the 18th century. Following the City's slow recovery from the devastating economic impact of the Great Fire of London in 1666, the hospital was redesigned and new wards constructed. In 1723, the architect James Gibbs was appointed to modernise and enlarge the hospital, leading to major rebuilding between

1730 and 1769 to provide 504 beds, after appeals to City Livery Companies and to private donors for funds. As a result, the hospital took shape in a form recognisable to the modern observer, with an enlarged staff consisting of three surgeons, three assistant surgeons, three physicians and an apothecary. Students were accepted and attached to an individual surgeon or physician, from at least 1664, and unstructured ward teaching and lectures took place on a regular basis from about 1730, but the Medical College of St Bartholomew's Hospital was not formally established until 1823. Dedicated buildings for teaching were provided only in 1833-4 in the partly vacated buildings of the Charterhouse. Nonetheless, teaching at St Bartholomew's had been energetically encouraged from about 1790 by the surgeon, John Abernethy (1764-1831), a friend and professional colleague of Sir William Blizard (1745-1835), surgeon to the London Hospital, where Blizard and his colleagues had formally established a medical school in 1785 with a full curriculum of lectures, anatomical dissection, clinical responsibility and study.[8] Indeed, Abernethy had been a pupil of Blizard and at Blizard's invitation from time to time he also lectured at the London.

The Royal London Hospital, The London Chest Hospital and St Bartholomew's Hospital became formally linked in 1999, into a merged management structure that recognised the modern need for large specialist units. A further merger occurred in 2012 with Whipps Cross Hospital and Newham General Hospital NHS Trusts, two general hospitals in East London with struggling finances. This management scheme, Barts NHS Trust, now provides hospital care for most of East London, with a referral practice extending further north-eastward. These arrangements were seen at the Royal London as sensible, and full of promising opportunity, although perhaps unwieldy, but at Barts they were at first opposed, largely on the grounds of historical tradition. The outcome, however, has been an outstanding success. Indeed, as a result of this merger, both the Royal London and Barts were immediately rebuilt and modernised, using funding from the NHS and from the City of London (*vide* Chapter 11), thrusting them both into the modern era of specialized healthcare and research.

St Thomas's Hospital

Like St Bartholomew's, St Thomas's Hospital[9] served the people of London from early medieval times. The original foundation was located close to St Mary Overie, the priory church of Southwark, now Southwark Cathedral, but this hospital building was destroyed by fire in 1212. The exact date of its foundation as an infirmary is uncertain. The date 1207 that is sometimes

suggested probably indicates a re-foundation within the jurisdiction of the Priory church, some years after the death of St Thomas a' Beckett in 1170. After the Great Fire the hospital was rebuilt on the east side of Borough High St, close to a cluster of inns, south of the Thames mooring zone in Southwark that was used by seaborne and road travellers to and from London, Canterbury and the Kent coast. One of these inns, St George's Inn, has survived since Tudor times and continues to be a popular refreshment place. The more recently founded Guy's Hospital (1715) stands adjacent to this original site of St Thomas's Hospital. St Thomas's Hospital moved from Southwark to new premises built according to Miss Nightingale's principles in a pavilion design on the south bank of the Thames opposite the Houses of Parliament in 1862-71 in order to allow a railway bridge to be built across the Thames to the City from what is now London Bridge station. This doubtless provided an opportunity to avoid competition from the nearby Guy's Hospital.

Until the Dissolution of the Monasteries in 1536-47, St Thomas's was staffed by canons and nuns subject to the rule of their religious order – an Augustinian rule. As occurred at Barts, King Henry VIII's break with the Pope in 1534 caused loss of funding.[9] St Thomas's closed during this period, leaving only the newly re-founded St Bartholomew's Hospital to care for the destitute and sick on the streets of London. In 1552 St Thomas's re-opened as the King's Hospital in Southwark following a petition to King Edward VI led by Bishop Ridley. During the next 150 years these two hospitals were the only institutions available for the care of the sick poor of London, although a number of small charitable foundations and almshouses appeared during this period. In 1553 St Mary's Hospital of Bethlehem (later better known simply as Bedlam), a house for reception of the insane, was passed to the City of London for management.[10,11] Management by the City provided a source of income to replace that which had been cut off by the withdrawal of religious support. At about this time, also, Christ's Hospital was reserved as an educational refuge for orphans, and Bridewell as a House of Correction. With Barts and St Thomas's, these were the five endowed hospitals and Royal Foundations extant in London in the 17th century.[11]

Other early hospital foundations in London

In the early 18th century there was a surge of interest in founding hospitals in London and, more widely, in Great Britain. This developed in the context of recognition of the need to improve the welfare of the working population, based on formal Christian teachings. It was supported by the increasing

national wealth from colonial conquests, from the income generated from the produce of slave labour in the colonies, especially sugar from the West Indies, from industrial development at home and generally from international trade and financial and banking activities of the City of London. New knowledge concerning anatomy and science, spurred by the renaissance and the subsequent rise of observational science, was also a fundamentally important influence, since it gradually led to recognition of the scientific opportunities offered by study of the biology of disease. These new hospital foundations were based on the philanthropic activities of groups of men and women, often including several physicians and surgeons, and usually an apothecary. There can surely be little doubt that their wives, who would have known more than their husbands of the plight of the poor from talking with their neighbours and servants, were important in fostering this activity, although no women are named in this context. Benefactions for hospitals were sought not from the church, the King or Parliament, but from interested businessmen and 'persons of influence' in London society, a new and unconventional source of funding. The London Hospital was one of these new hospital foundations (Table 1.1). The new hospitals were all located within the boundaries of 18th century London, where there was considerable and obvious unfulfilled need. All but two, St Thomas's and Guy's, were located north of the river Thames, a fact that has led to modern difficulties in maintaining referral patterns as populated areas have tended to move to suburbs and new towns far from these older boundaries.

The Westminster Hospital, the first of these new 18th century foundations,[10,11] was opened in 1720 to meet the needs of the poor living in Westminster. By the wish of its founder, Guy's Hospital was built in 1721 near London Bridge adjacent to the much older St Thomas's Hospital. St George's Hospital, was founded in 1733 in west central London, near Hyde Park. In 1745 the Middlesex Hospital opened to provide medical facilities in Soho, then part of the County of Middlesex. All these hospitals, like the London Hospital, founded in 1740, soon became centres of medical education, in the sense that aspiring medical men – there were no women physicians at that time - could 'walk the wards' for a fee, by attachment to individual members of the medical and surgical staff. This practice was allowed and, indeed, often encouraged by the hospital Governors since it raised the status of the hospital and, not least, since it provided a ready source of young students and doctors to work on the wards.[1,2]

Medical Education

In the sense we know it today, medical education was provided, as an informal opportunity in which the student was attached for a personal fee to a Surgeon or Physician and had certain duties in exchange for instruction. This traditional role was the norm at all the major London hospitals, such as Guy's and St Thomas's hospitals and was often quite well-developed, as it was for example, at St Bartholomew's Hospital. However, the first formally established Medical College in London, indeed in England, was opened at The London Hospital in 1785 by agreement between the medical staff and the hospital Governors in purpose-built accommodation adjacent to the hospital's east wing (Fig 1.1). This new venture, the London Hospital Medical College, was conceived and designed by the medical staff, who were ultimately responsible for its construction costs, maintenance and all the other responsibilities of running a teaching establishment. It was staffed, uniquely, by appointed lecturers and was supported by the medical staff, especially by its founder, the surgeon, Sir William Blizard. The school's income was derived from its students' fees, but part of these fees were received directly by the medical and surgical staff in recompense for their teaching and for the students' opportunity to make rounds with them around the wards and out-patients. The new medical school was therefore not directly funded by the Board of Governors. Indeed, the Governors were firm in their understanding that the hospital was for the care of patients, and not primarily an educational institution, although they clearly recognised the opportunity and, indeed, the potential value of a medical school to the Hospital's staffing and to its reputation. At this time, also, there was no link to any recognised academic institution.

Several other hospitals in London later also took systems of instruction designed to improve medical education, in addition to their primary role in the provision of medical and nursing care for their local populations.[11] These were the Charing Cross Hospital (1821), the Royal Free Hospital (1828), St Mary's Hospital (1845) and King's College Hospital (1846). The latter was at first located close to Kings' College in the Strand, but subsequently relocated to south London. University College Hospital (UCH) was unique. It was founded as the North London Hospital in 1834 forming a new medical faculty attached to University College London, itself founded in 1828. Of these new hospital foundations, UCH was the only School firmly based in a university educational environment. Additional educational opportunities were available in London, for example, at the Society of Apothecaries, at the College of Surgeons, where John Hunter

(1728-93) famously lectured and demonstrated, and at the Medical Society of London (founded 1773). There were thus three historic categories of hospital foundation; religious, charitable and educational, although these were not mutually exclusive. The latter was the least important in terms of provision of healthcare.

Fig 1.1: The London Hospital. A contemporary engraving taken from the painting by Bellows of the proposed new hospital building (1760) on its greenfield site adjacent to the Whitechapel Road, then just a lane. The Mount, to the right, was a plague burial mound.

These hospital foundations varied considerably in size and activity (Table 1.1). There were also a number of small hospitals founded to serve the needs of particular groups of people; for example, there was a Jewish Hospital in East London, and Italian and German hospitals also developed. At the London Hospital there was substantial support from the Jewish community and wards were set aside for 'Hebrew patients'

Table 1.1: The 12 major London hospitals, ranked by year of foundation, with numbers of beds and nurses, and annual income, in 1889.

	Foundation	beds	nurses	income
St Bartholomew's	1123	667	197	70,500
St Thomas's	1207	436	116	67,000
Westminster	1719	205	63	14,000
Guy's	1721	578	130	34,000
St George's	1733	356	100	28,000
The London	1740	776	218	59,000
The Middlesex	1745	307	86	20,000
The Royal Free	1828	160	40	6,000
UCH	1833	207	78	20,000
Charing Cross	1834	175	51	6,000
Kings College Hospital	1839	220	80	11,000
St Mary's	1845	281	60	14,000

Note the gap in new hospital foundations between 1745 (The Middlesex) and 1828 (The Royal Free) when there was a resurgence of interest after the Napoleonic Wars. Note also marked disparities between annual income and bed numbers. The London Hospital had the 3rd largest income and the largest number of beds and nurses. St Thomas's, a well-endowed hospital, had relatively few beds but a comfortably high income (Report of Lord Sandhurst's House of Lords' Committee 1892).[5]

The Royal College of Physicians, founded by Royal Charter of King Henry VIII in 1518 saw its role as setting standards and licensing physicians to practice, distinct from the apothecaries. It did not conduct any organised educational activities, other than several annual named Lectureships. In the 18th century most medical and simple surgical care was provided by apothecaries, in the community (to use a modern term) outside the hospitals. Midwifery, likewise, was a home-based practice, unregulated and without statutory educational requirements. Apothecaries were occupied particularly in making up medicines and prescriptions for a wide variety of disorders. As such they were the forerunners of both our modern-day pharmacists and general practitioners.

19th century developments

By the mid-nineteenth century London was relatively well-provided with hospitals, but the capacity of these hospitals to manage illnesses and accidents was limited by professional, social and financial factors and, also,