Medical History

Manchester's history and Manchester's medicine

JOHN PICKSTONE

One of the delights of medical history, as of medicine, is the range of topics that you can cover—from talking cures to the pharmaceutical industry, from laboratory experiments to care in the home. In this sense historians and other analysts of medicine have an advantage over those colleagues who study physical sciences and technologies. What word will cover for them the continuum from laboratory experiment to daily use of artefacts by consumers? Medicine encompasses science and technology, intellectual and social organisations. Moreover, its general purpose is easily defined—the reduction of death, disease, and discomfort.

This breadth of medicine offers splendid opportunities for historians. Medicine can be used as a mirror, reflecting a wide range of concerns that change with time and place. Medicine can be related to the life of communities, over time, and this is the perspective that I want to use here. But inquiry needs questions. For historians to picture medicine in a Victorian city, say, they must be answering questions both about medicine and about urban life. Here I take up a general question that I trust is of interest to doctors as well as to historians. How are we to relate the interest of doctors in technique and technology with their broader concern with social life and political organisation?

It is tempting to set these two aspects of medicine in simple opposition: some doctors are concerned with laboratory science or with medical technology; what else would be expected when recruitment is largely via school science? Some doctors are concerned with public health or medical administration; but these are "soft subjects," more akin to social sciences, a long way from the laboratory. Here I wish to argue against this polarisation by using a historical case study of medicine in Manchester over the past two centuries. The choice is not arbitrary.

Manchester in British history immediately suggests the industrial revolution, perhaps especially the period of the 1830s and 1840s when intelligent tourists came to Manchester to see the future, to see

the beginnings of machine production within a global economy. What impressed such tourists? On the one hand the enormous technical ingenuity and power that went into the huge mills and machinery; on the other hand, the foul squalor and the miserable housing around the mills. By the 1830s the health problems of these new industrial communities were notorious. German visitors from pleasant country towns thought of Manchester as a kind of inferno. Manchester was then, and has remained, a symbol of British industrialism—of its technical and scientific inventiveness, and of associated urban problems and ill health. Where better then to study the record of provincial British medicine in its double relationship to technical advance and to social concerns?

I shall concentrate on four main periods—around 1790, 1850, 1900, and 1940; roughly half century intervals over the past two hundred years. The focus will be on physical medicine rather than psychological, on medical institutions (formal and informal) rather than on individual practitioners, on regular medicine rather than irregular or lay medicine. I am aware of these omissions, but I hope that we can develop a framework that could be extended to these and other topics and to our contemporary problems.

The Manchester Enlightenment

It is for the late eighteenth century that Manchester first appears in histories of medicine. Its doctors, ministers, and merchants were part of that cultural enterprise that we call the Enlightenment. To examine the writings of Thomas Percival, John Ferriar, and their friends in other northern towns, is to be struck with the breadth of their medicine. Medicine, for them, ranged from chemical discoveries to disquisitions on body and mind and the mediating role of the nervous system, and on to considerations of urban hygiene and regulation. This breadth was characteristic of Edinburgh

University, where many provincial doctors had studied; there technical and natural sciences were developed together with moral and social sciences. It was characteristic too of the Manchester Literary and Philosophical Society, where doctors were associated with magistrates and lawyers, industrialists and merchants, in the pursuit of natural knowledge and rational amusement. This breadth contrasts strongly with the later notion of the professional pure scientist or the rather narrow and conservative English notion of the gentleman physician. The Scottish and provincial pattern remains a useful model of what professional can mean.

What then of the voluntary hospital in which these Manchester doctors worked? Can that central institution of Manchester medicine be identified with this breadth from technical innovation to social con-

Manchester Infirmary and Lunatic Hospital c 1780.

cern? The answer for the mid-1790s is yes. The Manchester Infirmary then was probably the most comprehensive medical service in Britain, and perhaps the largest. It occupied a fine site on Manchester's "Piccadilly". It incorporated a lunatic hospital and asylum, a set of baths, a home patient service manned by distinguished physicians, and an outpatient service, as well as the hospital wards for inpatients which were the major concern of most infirmaries. It also had a fever hospital or house of recovery, the first such in Britain. The fever hospital was linked with a board of health, a voluntary body that promoted civic public health regulations and collected medical information on fever and its treatment. The hospital was used for teaching. Its leading physician, Thomas Percival, wrote a text on *Medical Ethics*, which was to become widely used in the United States as well as in Britain.

This remarkable comprehensiveness had not been reached without conflict. That the home visiting and the fever services were part of the central institution, rather than carried out in a separate, secondary dispensary, was the consequence of a takeover at the infirmary. Percival, and especially his younger associates not on the main infirmary staff, had wanted to expand the infirmary physicians' work; they had initially been rebuffed by the surgeons, especially Charles White, one of the hospital's founders. But the infirmary, at the level of middle class subscribers, was a democratic organisation and the reformers gained control in 1790 after a public dispute intimately linked with several other aspects of Manchester politics. The Whiggish and radical groupings, mostly of religious dissenters, took over the infirmary, which was more accessible than the formal, mediaeval institutions of Manchester government. Charles White and his friends, mainly Tory churchmen, went off to found the maternity charity which is now St Mary's.

For a while, then, the infirmary was identified with a broad outlook; Manchester medicine was as innovative as its early industry. That state of affairs did not last. It was overwhelmed by the repression and depression of the French wars and by enormous growth of population. Manchester and Salford numbered about 50 000 in 1790, about 100 000 in 1810, and about half a million by 1860.

The classic industrial city

By the mid-nineteenth century it is still possible to find the range of interests just described, but they no longer correspond neatly to the central institutions of Manchester medicine—the Manchester Royal Infirmary and new medical schools. We can here explore three aspects of this disjunction: (i) the public health movement and its medical supporters; (ii) the question of technical innovations in public health and medicine; (iii) the role of the Manchester Royal Infirmary and other hospitals.

The tradition of public health investigation and concern, begun by Ferriar and Percival, continued through the nineteenth century. Its main institutional forms were the Statistical Society, begun in 1833, and the Manchester and Salford Sanitary Association from 1852. The first was associated with the resurgence of Manchester liberalism, with moves for central and local government reform and with new, regional, groupings of doctors. In their new societies the leaders of local medicine and surgery sought to show that they were scientific professionals not just tradesmen; intellectual and aware investigators, even though they were in provincial cities rather than London or Edinburgh.

The question of urban health was topical in the early 1830s. Dr J P Kay argued in a famous text that the moral and physical state of the Manchester working classes could be seen as an accidental consequence of industry, due to bad taxes and the lack of education. He favoured moral education and the reduction of medical charity so as to make the working classes more self reliant. His fellow practitioner John Roberton initially regarded his Manchester experience as a condemnation of industry. Whatever political economists might claim about the growth of national income and decline of overall mortality, it was evident in Manchester that morbidity, especially the chronic gut and lung diseases of industrialisation, was high. Roberton took the medical charity data at their

face value—the people needed medical aid, including convalescent homes where they might recover from the worst effects of the city. Here was a debate about medical service statistics that resonates with those in other more recent depressions. It is also an indication of the breadth of public health concerns. They were by no means restricted to advocating the removal of filth, though that was certainly important.

Charles White, surgeon and man midwife; founder of Manchester Infirmary and of the Lying-in Charity.

But the medical men who reported on public health in Manchester during the 1830s and 1840s were not in general the leaders of the local medical profession. They were not honorary staff at the infirmary and they were not the organisers of medical schools. Generally they were attached to the minor medical charities—the maternity charity (John Roberton), the Ancoats Dispensary (J P Kay), the Chorlton Dispensary, or the Poor Law service for paupers.

Public interest varied. Roberton seems to have kept the Statistical Society going during the 1840s, but in the 1850s, after the national legislation of 1848, public health was prestigious enough for an Anglican canon and the medical school's owner to set up a sanitary association under distinguished patronage. But it wasn't such men who kept it going. The key figure for much of the late nineteenth century was Arthur Ransome—the son of a Manchester surgical family, well educated, himself a prosperous general practitioner in Bowdon. From the 1860s much of the educational role of the association was taken over by women.

SCIENTIFIC INNOVATIONS IN PUBLIC HEALTH

The Manchester public health movement, in its various forms, showed considerable technical and scientific innovativeness. It was the Manchester engineer J F Bateman who, about 1850, built the Longendale water scheme for the municipality after it had bought out a notoriously inefficient private water company. Several professional chemists were associated with the Sanitary Association when advanced training in chemistry was a novelty. It was Manchester chemists who pioneered the manufacture of carbolic acid and other antiseptics. Carbolic, of course, is well known from Joseph Lister's antiseptic surgery in the 1860s, where it was

mobilised against the germs newly discovered by Pasteur. But Lister had probably begun to use carbolic before he heard of Pasteur; like others he was using a relatively pure coal tar derivative in the hope of reducing putrefaction. McDougall and Robert Angus Smith were two Manchester chemists who had helped provide carbolic. Crace-Calvert marketed a whole range of carbolic products which became well known.

The combination of medicine and chemistry was an important feature of Manchester. One could point to the experiments by William Henry, physician, friend of John Dalton, and manufacturing chemist. (The family sold magnesia and mineral water). In the 1830s he showed how contagion on textile materials might be inactivated by heat without ruining the cloth; his device was essentially an autoclave, but not until much later in the century did autoclaves come into use. Here was a tradition of practical medical investigation which might have formed the basis for a modern pharmaceutical industry, such as developed in Germany and then in America. But, as we shall see, this tradition weakened and became more marginal. Frankfurt, not Manchester, was the home of the new medical chemistry at the end of the century. But first we should deal with the third aspect of the mid-nineteenth century—the role of the hospitals and medical schools; the technical and social breadth of their vision of medicine.

THE MID-CENTURY INFIRMARY

If we compare the set up in the 1850s with that in the 1790s we see a small absolute increase in the number of inpatients. But in the range of services and in relation to the enormous growth of the town we are faced with an obvious contraction and introversion. The infirmary had been expanded in the 1820s about the time that suburban dispensaries such as Ancoats and Chorlton had been founded. The infirmary was substantially rebuilt in mid-century, in a way symbolic of consolidation. The mental hospital went out to Cheadle—the town centre was no longer salubrious enough to attract paying patients and the county asylums were taking the paupers. The fever hospital site was sold; since so many fever patients were paupers they could be off loaded to the poorhouse; any non-pauper admissions could be made to the main building. The income from these sales was considerable for Piccadilly was now a major centre of the city and land was valuable. The rebuilding scheme was impressive from the outside, but it did not produce a good hospital and the net increase in beds was small.

From mid-century the infirmary was no longer an open institution dependent mainly on annual subscribers; now most of the money came from big donations and legacies. The honorary staff were no longer elected, which must have reduced subscriber interest. It was increasingly a professional institution and subject to much criticism. Its workload was horrendous: about half of its inpatients were accident victims. The mortality rates were high—about 12%—even by the high averages of mid-Victorian hospitals. Public health reformers interested in hospitals saw it as a disgrace; Robertson launched a major criticism of its record for postoperative infection; Miss Nightingale thought that the infirmary should be pulled down.

For Robertson and others accidents were the mid-nineteenth century equivalent of plague and fever in earlier times, except that accidents were largely restricted to the working class. He studied hospital construction and argued for well ventilated buildings. He argued for more, small hospitals, for ambulances, and for casualty stations. If Manchester Infirmary had a major specialism it was surely accidents—even tourists were shown around to see the results of industry; but the innovative thinking about accident treatment did not come from the infirmary

surgeons or the lay supporters. The technical and the medical interacted in as much as doctors treated the victims of industry. But in the central institutions of medicine there was little technical innovation in treatment or medical research.

Science and capital

In the Edwardian era the infirmary moved to the suburbs, to Rusholme. The move was not solely to escape from the noise and dirt of the city centre, or just to make room for more city trams, or for a city art gallery that was never built. Nor was it by accident that the Manchester Royal Infirmary and Eye Hospital and St Mary's all finished up by the university. The move was part of a plan to build a complex of teaching hospitals, for, from the 1870s, the private medical school had become the Faculty of Medicine of Owen's College, later of Manchester University.

From the 1880s and especially around 1890 there were a whole series of proposals about the infirmary site and about the use of the huge legacy left by Joseph Whitworth, the engineer, which was administered by trustees closely connected with Owen's College. The college wanted the infirmary to move to Rusholme, but it also wanted control of the senior medical appointments. Some of the infirmary staff and some of the lay backers supported this move: other laymen and professionals argued for the retention of the Piccadilly site and for the continuance of local professional control. The city corporation favoured the move. In the 1890s it had several major projects in hand: the Thirlmere water scheme, the intercepting sewers and the Davyhulme sewage works, the Municipal Technical College, and the greatest of all—the Manchester Ship Canal. But the hospital proved difficult to move. The big projectors in the university and town were blocked, at least for a time, by middling laymen and local professional interests. Advance was slow and partial; only in a limited way did prewar Manchester show the shift to university and scientific medicine that was then taking place in the major American medical centres.

It was in Germany that laboratory based medicine had developed. German medical schools were university schools; by the mid-nineteenth century almost all had research institutes for physiology and pathology as well as for chemistry. By the end of the century German medical science was world famous, and the notion of organised research was penetrating the hospital wards, as well as the ancillary laboratories. This style of medicine was introduced to America at Baltimore in Maryland in the 1880s, with the use of a major legacy, and it rapidly spread to the major east coast centres. By 1910 there were organised efforts to introduce the system in Britain, where medical schools were generally conservative, and where medical sciences such as physiology had developed best in universities such as Cambridge, where there was little or no clinical medicine.

Why was it then that medical research was so little developed in

Manchester Infirmary in the mid-nineteenth century.

Manchester, that patterns which came to be seen as American had to be imported after the first world war? Manchester was relatively wealthy and it had a broad industrial base. Industrial money, notably in the legacy of Sir Joseph Whitworth, was available to the university and to the hospitals. (In America it was Rockefeller and Carnegie money that was mobilised to "scientise" medicine.) Manchester University had the biggest and best chemistry department in Britain, directly modelled on German schools and strong in organic chemistry. The university had the support of local industrialists, among them manufacturers of dye stuffs. There was, as I have shown, a traditional link between medicine and local chemists. When the medical faculty was established in the 1870s a full time professor of physiology was appointed, as a researcher, and he specialised in physiological chemistry. Some of the conditions were favourable.

LITTLE HEADWAY IN MEDICAL SCIENCES

Yet by 1914, though Manchester had attained considerable distinction in the physical sciences, there was little headway in medical sciences. Of course, there were individual exceptions: a Salford physician did important work on lead poisoning; William Roberts, the first professor of medicine in Manchester University, was a notable experimentalist (in his private laboratory); his successor, Julius Dreschfeld, was a fine exponent of German medicine. But the only scientific programme established here in the nineteenth century was in bacteriology, where another immigrant, Sheridan Delépine, collaborated closely with the sanitary reformers and with local medical officers of health; he built up research facilities by doing routine bacteriological analyses for local authorities.

That kind of practical research, linked with service functions, was common hereabouts in the physical sciences. There was undoubtedly much potential in public health, in human physiology and pathological physiology, in therapeutics and links with the chemical industry; but no provincial tradition was established (except perhaps in Liverpool). English medicine, especially in London, tended to polarise between the dominant general consultants on the one hand and the high priests of biomedical research on the other, most from Cambridge and Oxford. This polarisation was moderated by University College London and by the Scots, to whose broader tradition I have already referred; the English provinces contributed little.

I do not mean that Manchester was a bad place to study medicine: it was improving and, like other provincial schools, it began to count alongside the London teaching hospitals by the end of the century. I mean that in the Manchester of 1900 one could have expected more. If any British city was equipped to do for medicine what Baltimore, or Frankfurt or Munich or Berlin did, then it was Manchester. There were some important local contributions to what we might call biotechnology, including the activated sludge process for sewage treatment, developed at Davyhulme in 1914, and the acetone fermentation process, devised during the first world war by Chaim Weizmann. Both inventions came from the strong university chemistry department. But you can look in vain for comparable developments in medicine.

In large measure this was because the universities inherited in the private and hospital schools traditions of narrowly professional education also characteristic of the London teaching hospitals. The clinical teachers were leading local practitioners; it was not easy to bring in scientific clinicians from elsewhere. Teaching was a minor occupation, a professor's main concern had to be private practice; these teachers were too busy for social or technical innovation. In fact they shared the mentality of the businessmen among whom they lived. Both groups were successful; but innovations, in medicine or in motive power, were now coming from abroad.

Medical students too were practical, busy with the examination requirements of the professional bodies, not interested in theory. The few full time professors of medical science found it difficult to persist in research and they tended to become teachers and administrators. When Abraham Flexner surveyed British medical

schools in about 1919 he thought that it was a shame that students moved round so little; they could get good physical science training at Manchester and might then better go to University College London, one of the few places in Britain where medical sciences thrived.

Harry Platt (1886-1986), seen in a student cartoon planning Manchester's hospitals.

Twentieth century synthesis

It was not for medical sciences that Manchester medicine became known in the early twentieth century. Rather it was for the development on a broad scale of certain medical and surgical specialties. Characteristically these entailed both social concern and technical input.

The inspiration was often American. The first world war, which had broken links with Germany, had increased American influences. In this matter as others medicine followed Manchester economics. If German led firms had been prominent here in the late nineteenth century the twentieth brought British Westinghouse, Ford, and Kellogg's (to mention only the American companies at Trafford Park).

It was to America that Manchester medical innovators turned. Geoffrey Jefferson learnt his specialty, neurosurgery, largely as a disciple of the American Harvey Cushing, partly during war work, but also afterwards at the university hospital which Harvard University had recently built. Harry Platt, the orthopaedic surgeon, was a disciple of Robert Jones of Liverpool, but he had benefited considerably from American training and America was always an inspiration to his views on medical and surgical organisation. Both Platt and Jefferson first established their specialties in minor hospitals—Ancoats and Salford Royal respectively; surgical and medical innovations were commonly made outside the Manchester Royal Infirmary. In the 1930s, when their proponents had international reputations, these new special disciplines were transplanted to the infirmary.

The importance of these men for this story lies in more than technical specialisation. Their work was also symptomatic of a broadening of medical and surgical horizons beyond the voluntary hospitals and into the wider community. The new orthopaedics, for

example, included organised fracture services, and thus the rational distribution and treatment of accident cases. It included long stay orthopaedic hospitals for crippled children and operating on patients with tuberculosis. Support for orthopaedic surgeons came, to some extent, from labour interests; by the 'thirties, working people contributed a substantial proportion of voluntary hospital funds. It also came from local authorities out of responsibilities for tuberculosis and for the health of school children. The extension of public health in the early twentieth century, 'outwards from infectious diseases to cover school clinics and infant clinics, tuberculosis services, and (from 1930) municipal hospitals, meant that the frontier of local authority public health was often also the frontier of medical and surgical specialties. That is why, for example, orthopaedics was referred to as a part of social medicine.

The same principles might be illustrated from the tuberculosis services, which combined sanatoria and surgery, dispensaries, general practice, and health education. It was a much wider vision of medicine than had been characteristic of consultants around 1900. Manchester and Lancashire County Council were leaders in technical and social integration.

The same general principles applied also to the growth of radiology. In both diagnostic radiology and in radium treatment Manchester medicine had benefited from the university's strengths in physics. But development was problematical, partly because of the reluctance of the infirmary generalists to give up resources to special departments. Yet by the 1920s Barclay's radiology department was one of the best equipped in the country and in the 1930s Ralston Paterson made Manchester radiotherapy world famous. He did so by taking a broad view of the subject: using physicists intelligently, collecting systematic data on cancer incidence and treatment, collaborating with a series of local authorities to provide a full regional radiotherapeutic service. The Christie Hospital was later to pioneer screening programmes and a major investment in health education.

BENEFIT OF GOOD RELATIONS

In Manchester these broad disciplines thrived because there were good relations between the local authorities and the teaching hospital, mediated by a strong civic university. One embodiment of the cooperation was the Manchester Joint Hospitals Advisory Board, set up in the mid-1930s, partly as a result of public discontent with the previous lack of coordination of maternity services. Platt was a prominent member of that board as was the city's medical officer of health.

The National Health Service extended this kind of initiative in the context of a service, free (initially) at the point of use. Platt and Jefferson were prominent in the new arrangements; the university's vice chancellor, John Stopford, was first chairman of the Manchester Regional Hospital Board. He had helped shape the National Health Service, especially as regards medical education. He was then able to institute a full time chair in medicine and to develop other more social institutions, such as the Darbshire House Health Centre for general practice, or the chair in occupational medicine, or rheumatology. Manchester, with Oxford, was beginning to make the running in the newer specialties of medicine.

There is, in this essay, a certain symmetry. I have argued that Manchester medicine was notable, first at the beginning of the industrial revolution, and then again around the second world war, for the breadth of its concern, for the integration of technical and social innovations; at these times it was open to public influence, through voluntary bodies and later through statutory public authorities. I have argued that the same breadth can be seen in the public health societies of Victorian Manchester, but that neither technical innovation nor social concern were then prominent in the central medical institutions, run by men who concentrated on private practice; and relatively immune from public influence, except that of economisers.

But history moves on even past historical symmetries. What does all this have to do with the present? I'll restrict myself to two points—one about social organisation and one about the technical.

It was, I think, a strength of Manchester medicine that, before the second world war, it operated by convincing local authorities. During the war it was argued by the ministry that health was so important to the interest of local politics that to put it under some sort of commission would take the heart out of local political culture. Nor would this separation benefit health services. Water and gas might be supplied by national corporations; who cared so long as water and gas came out of the appropriate taps? But health was personal and communal and should therefore be subject to local and political control. That is not necessarily an argument against the National Health Service of 1948, but it surely is a caution against the general tendency then and since to make medicine into a technical corporation. The main protection of the health services now lies in their popularity. The maintenance of that high respect will require a continued interplay between professional and community interests. On the positive virtues of such interactions the record of Manchester medicine would seem to be supportive.

But it is not just our looking backwards that leads to this conclusion. We are surrounded by new techniques and technologies that make for complex and difficult decisions about doctor-patient relationships and about priorities in funding. We can see the necessity for interaction and for breadth of conceptualisation; the need for women and men who can move from the intricacies of laboratory science to the broad questions of social impact and welfare economics. We need the wide view of medicine which I've tried to illustrate in this article.

To study the history of Manchester is to study technical innovation and social consequence; to study its medical history is to relate these features to the development of medicine and welfare. It seems to me that such a task is not without its uses for us now.

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Wellcome Unit for the History of Medicine, The University, Manchester M13 9PL

JOHN PICKSTONE, MSC, PHD, director

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