Feature article

Joseph Levenstein and the Reform of Medical Education

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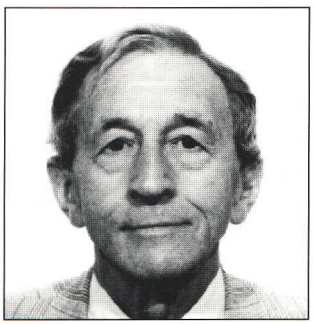

Curriculum Vitae

Dr Ian McWhinney is Professor Emeritus in the Department of Family Medicine at The University of Western Ontario (Canada). He was born in Burnley, Lancashire (England) and educated at Cambridge University at St Bartholemew's Hospital Medical School. For 14 years he was a General Practitioner in Stratford-on-Avon. In 1968 he was appointed Foundation Professor of Family Medicine at The University of Western Ontario. He retired in 1992, and now has a post-retirement appointment in the Centre for Studies in Family Medicine. His most recent book, "A Textbook of Family Medicine", was published by Oxford University Press in 1989.

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Summary

Reform of clinical education in medicine is coming. Looking at previous changes in medical education, it is clear that they were driven by (1) social changes and (2) by major developments in science and technology. The leading role of Jenner and Osler in the reform on present systems, is explained and the dynamic changes in medical education at Rockford Medical School (Illinois) highlighted. This is seen as a pioneering institution in our modern times and because Joseph Levenstein is an outstanding pioneer himself, it was a well-matched choice to appoint Joseph at Rockford to lead them further on in their reform. We hope to hear much more about Rockford and its leader in the years to come.

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Introduction

We are about to see the most radical reform of clinical education since the early years of this century. Changes in medical education are driven by two forces: social change and developments in science and technology. The beginnings of our present system in the English speaking world are exemplified by the careers of Edward Jenner and William Osler.

In Jenner's time, there were three ways of entering the medical profession. A small number attended university and graduated with a classical education and a degree, but had very little clinical

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experience in their training. Many more were apprenticed to a surgeon or physician and had a practical training; and others were apprenticed to an apothecary, who also provided a very practical education. At the age of 12 in 1761, Jenner was apprenticed to a country surgeon in Sudbury, Gloucestershire and remained with him until 1770 when he went to London to spend two years in London as a pupil of John Hunter, the eminent surgeon and anatomist. Again, this training was very practical, consisting, as it did, of attending Hunter's patients at St George's Hospital; but also it included lectures in anatomy at Hunter's school of anatomy, and anatomy at that time included pathology.

In the first half of the 19th century, the different branches became consolidated into one medical profession. By the Apothecaries Act of 1815, apothecaries were allowed to practice medicine and standards were set for their training. It became customary for trainees to take the double qualification of licentiate of the Society of Apothecaries and Membership of the Royal College of Surgeons, thus becoming the forerunners of the modern GP.

At the same time, the hospital was becoming the base of medical education. The new methods of clinical examination introduced by the French school of physician pathologists, and the verification of the results by necropsy, made the hospitals into places where the new clinical science was advanced, and where medical students were educated. William Osler, born in Upper Canada in 1849, entered the Toronto medical school in 1868. The medical course began with two years in the dissecting room – the student's only laboratory experience. The clinical education was so unsatisfactory at that time that Osler moved to McGill in Montreal where medical education was based on the Edinburgh model. At McGill, the laboratory work was no more advanced than in Toronto, but at the Montreal General Hospital, Osler found two valuable assets: 'much acute disease and a group of keen teachers', even though the old building was 'coccus and rat ridden'. Specialisation among the faculty was unknown: all were general practitioners, practising both medicine and surgery. Even so, McGill was the best medical school in Canada and probably rivalled by only one American school, Philadelphia.

American medical education in the 19th century was indeed at a low ebb. Any physician could open a medical school and there were many such places, where lectures were given by poorly qualified teachers and clinical teaching was minimal. Developments in physics, chemistry, pathology and bacteriology soon made reform a necessity. The death knell of the inferior proprietary schools was sounded by the Flexner report of 1910. Flexner used Johns Hopkins in Baltimore as his model, founded in 1870 on the lines of German medical education.

Thus began the modern era. Medical education became firmly based on the laboratory sciences. Clinical education was concentrated in teaching hospitals which, as the 20th century progressed, became increasingly specialised and less and less representative of the burden of illness in the general population. As medicine became increasingly fragmented, general practitioners were excluded from medical schools, and generalists of all kinds formed a dwindling proportion of medical faculties.

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A number of factors have now converged to make radical reform necessary. Medical education always goes to where the patients are, and patients have begun to leave the teaching hospital in large numbers. The change in morbidity pattern from acute to chronic disease means that most sick people are at home and in their community, not in hospital. If they do attend hospital, they do so for short term admissions or brief visits to outpatients. Economic pressures have forced hospitals to cut beds, reduce length of stay, and limit services to those which only hospitals can provide. Advances in technology have reduced the need for beds, for example in some branches of surgery. Unless there are some unforeseeable developments, most doctors graduating today will spend their professional lives caring for patients with chronic diseases of many kinds. A large proportion of their patients will be elderly, and more than ever before will be in advanced old age. To learn how to care for patients with chronic illness, one must have a long term relationship with them. An understanding of context – family, home, community – is crucial, and this is what the teaching hospital cannot provide. This is why medical education must move closer to where people live, in both the physical and metaphorical sense.

Medical education must move closer to where people live – a teaching hospital does not provide for this.

Joseph Levenstein and Rockford, Illinois

In 1990, Joseph Levenstein left Cape Town to become Professor of Family and Community Medicine at the University of Illinois at Rockford. Rockford probably represents tomorrow's medical school better than any other in the world. It is the best example I know of a community-based medical school. To understand what this means, it is important to distinguish between medical schools that are community-based and community-oriented. A school can claim to be community-oriented if it shows awareness of community health problems and sends its students out for attachments to community practices and institutions. But it can do all this by remaining in the teaching hospital or health science centre and looking at the community through the window. To be community-based requires a redefinition of a medical school as an organisation which uses the whole health care system as an environment of learning.

Rockville is a city of 150 000 people about one hour's drive west of Chicago. If one asked to see the medical school, one would be directed to a small building which houses the administration and three basic science departments. There is no teaching hospital. All of the city's existing hospitals are used for teaching. Students complete one year of basic science education before coming to Rockford, after which they do six months of pharmacology, pathology and immunology. For the whole three years of their clinical education, students are based at one of the three community health centres where they care for a practice of 100 families under the supervision of members of the Department of Family Medicine. Each student spends one and a half days a week in the health centre, caring for these patients and attending courses put on by the Department of Family Medicine. For the remainder of the week, they attend one of the hospitals for their experience in the specialities. The current position in clinical education is therefore reversed. Instead of being based in the hospital and going out to the community,

Rockville Medical School has no single teaching hospital.

The diagnosis is primarily clinical – as no investigations have proved definitive.

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clinical students are based in the community and go out to the hospital. The hospital still has an important part to play in clinical education, but it is no longer the main part. As for the tertiary care hospital, as time goes on it becomes less and less appropriate for undergraduate education. Its main role is likely to be the postgraduate training of specialists.

Rockford recently introduced a seven and a half year programme designed to train students from rural areas who will return to these communities as family doctors. Fifteen students a year (out of a class of fifty) are selected by a committee representative of rural communities. The rural students have the same curriculum as the rest of the class and in elective periods return to their rural community work there under the supervision of a local, family doctor. After graduation, the students enter the school's family medicine residency programme. Again they have the same three year experience as other trainees, with an additional six months of rural training.

As a pioneering institution in medical education, Rockford did well to choose Joseph Levenstein – an outstanding pioneer himself. They are well matched, and I am sure we will be hearing much more about the man and the institution in the years to come.

We are about to see the most radical reform of clinical education in medicine.