The word evidence and the practice of medicine have become inevitably linked. Evidence has become central to how we manage patients in the clinical setting. It is difficult to comprehend that it is a relatively new concept. It appears to have been there for a very long time. Surprisingly it has only been with us for 22 years. Recently on the 25th Jan 2014 the BMJ and JAMA simultaneously published the same editorial evidence based medicine-an oral history. The article was accompanied by a video interview with the major figures in the field.

The seminal paper on evidence based medicine was published by Gordon Guyatt in JAMA in 1992. This paper introduced the concept to the wider world. Guyatt's background was at McMaster medical school where epidemiology and statistics were taught together with clinical medicine. When he arrived there in 1980 critical appraisal was being practiced. This was to be the forerunner of evidence based medicine. Guyatt urged doctors to treat patients based on the evidence about what worked best. According to the evidence. He wanted a new balance to be struck between intuition and this new approach to patient care. He initially called it scientific medicine but following the deliberation the term evidence based medicine was coined. Initially he thought that graduates would be able source the evidence for themselves but this did not happen. He subsequently concentrated on training them about how to seek secondary sources of evidence. He is optimistic that we know have the technology and knowledge to complete the integration of evidence based medicine into clinical practice.

The other big players at McMaster at that time were Guy Sackett and Brian Haynes. From the 1980s onwards they had been researching the area of critical appraisal. Furthermore they were seeking ways of bringing critical appraisal to the bedside. Sackett has a clear understanding of the difference between critical appraisal and evidence-based medicine. Evidence-based medicine goes beyond critical appraisal. It integrates the knowledge with the clinical skills and the patients values. He gives the example of anticoagulation in patients with atrial fibrillation where one presents the data to the patient in a way that he can weight up the benefits of preventing a stroke against the risks of developing a bleed. Initially, there was a degree of backlash against the introduction of evidence based medicine. Some detractors stated that it was simplistic and would lead us down the path of cook-book medicine. Others felt that it represented an attempt by managers to simplify medicine and bypass the consultant specialists. However the protagonists quickly won over and bypassed the detractors.

Kay Dickersin had been working in Johns Hopkins where she had become interested in the registration of perinatal trials. She was advised to visit Oxford and to collaborate with Ian Chalmers in Oxford at the National Perinatal Epidemiology Unit. In their collaborative they found that 25% of RCTs were never published. Often the researchers lost interest and moved on to other things. The results of the research simply ended up in a drawer. A lesser problem was editors of medical journals refusing to publish trials with negative results. This failure to publish such a large number of trials was a major cause of concern because the evidence was the likely to be skewed in favour of positive findings and positive results. It means that there could be evidence out there that we dont know about. Dickersin felt that there should be a greater emphasis on safety. The harms literature needs to be expanded. It is not sufficient to concentrate on the effectiveness limb of trials.

Drummond Rennie, while deputy editor NEJM got a manuscript from Tom Chalmers, John Hopkins in 1977. It was the first metaanalysis that he had ever read and it seemed to solve a huge number of problems at the one time. It represented a new way of doing with the medical literature. It showed how to deal with important clinical questions such as whether one should give anticoagulants to patients with a myocardial infarction. It showed that it was a good idea and proved it. Subsequently, Rennie met David Sackett who came to meet the editors of the NEJM. He proposed a series for the NEJM. When he moved to JAMA Rennie put together a series on evidence based medicine. NEJM was a bit lukewarm at the time. Its problem was you are never comparing apples with apples when you do a metaanalysis. Rennie points out that unless you are going to depend on one paper only you have to allow for some latitude.

Brian Haynes was a 2nd year medical student at Alberta. He attended a psychiatry lecture on Freud. When he asked about the evidence, he was told that there was none. Subsequently when he went to Toronto people used to get cross when he asked what the evidence was. Later in a lecture given by Dave Sackett he learned that one could find and obtain evidence for clinical actions. Haynes went on to work with Sackett who developed a health research unit in order to see how best the evidence could be simplified. He called this the knowledge translation. He wanted to get away from the idea that you had to wait for old doctors to die off in order to bring in new concepts particularly evidence based medicine.

Paul Glasziou, an Australian had been working in the area of epidemiology and clinical trials. He met with Dave Sackett when he visited Sydney and this represented a new direction for him. He retrained as a GP so that he could determine how research could be made most useful for primary care doctors. He points out that when learning medicine, students need to be sceptical rather than being overwhelmed by authority. He thinks that we are too slow in doing systematic reviews and that they take too long. Also he thinks that we should do more non-pharmaceutical trials. Unlike some others, he
feels that it possible to apply evidence to patients with co-morbidities. It is a matter of beginning with the most important condition.

Iain Chalmers and Muir Gray have been the major UK innovators of evidence based medicine. Chalmers established the Cochrane Collaborative. They both felt that the 20th century was the century of the doctor and that the 21st century is the century of the patient. Personalised medicine will become increasingly important.

All these individuals came together in the 1980s and 1990s with the single determination to make scientific research the basis of clinical practice. Over a period of 2 decades they altered the face of medicine and how we practice it.

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References


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