

Obituary



Wallace Fox (1920-2010)

*Lives of great men all remind us
We can make our lives sublime
And in passing leave behind us
Footprints on the sands of time*

Henry Wadsworth Longfellow

*In reading the lives of great men, I found that the first victory
they won was over themselves - self-discipline with all of them came first.*

Harry S. Truman

Wallace Fox, architect of the world-renowned ICMR Tuberculosis Research Centre in Madras (now Chennai) and a giant in the field of tuberculosis, passed away on 22nd January this year, at the age of 89. His last few years were unfortunately spent in a nursing home as he was afflicted with Alzheimer's disease. His stupendous contributions in the domain of tuberculosis have been elaborately described by many - BMJ, Lancet, IJTLD, The Times, Guardian, and our own *Indian Journal of Tuberculosis*. This piece takes a look at another aspect of Fox, namely, his contribution to the promotion of research culture, with focus on India of the late 1950s.

It is well-known that Fox initially shot to fame with a randomized control trial (RCT) of home treatment versus sanatorium treatment (with anti-tuberculosis drugs) at Madras. In 1956, when this trial was initiated, the prophets of doom were many. Some said that randomization would be an unacceptable concept in a developing country like India; others were emphatic that long-term follow up of patients was simply

impossible in this country. All agreed though that the outcome of this trial was critical for the management of tuberculosis in India, as well as other developing countries with a high disease burden and inadequate resources. Fox was therefore anxious that the trial should be conducted strictly according to the research protocol and measure up to international scrutiny. He therefore conducted frequent meetings of his staff to emphasize these points, and arranged for his senior statistician to deliver weekly lectures on statistical methods and research methodology, with Bradford Hill's classic on "Principles of Medical Statistics" as resource material. Fox believed that active collaboration with statisticians was critical for the success of any clinical trial, and that the doctor-statistician equation was as important for research as the doctor-patient relationship is for clinical success. He made sure that all his clinical colleagues got this message too. For his part, Fox always sought advice from his life-long statistical colleague Dr Ian Sutherland, who later became the Director of the MRC's Statistical Research Unit, London.

Fox's views on research and research workers need to be publicized for posterity. A famous Fox quote is "A good research worker should always be asking of his seniors WHY (*e.g.*, Why undertake these investigations or test this regimen?), and when not doing WHY NOT? (*e.g.*, Why not undertake some other investigation instead or assess an alternate regimen?)". The basic point he sought to make was that an *inquiring* mind was essential for anybody wanting to embark on a research career. He strongly encouraged independent thinking and uninhibited expression of new ideas, a sacrilege in the bureaucratic set-up of the 1950s in this country. According to Fox, a wise research worker should record in writing every decision taken by him and its rationale. This was advice he had received from his illustrious colleague Marc Daniels who developed cancer, and often said "If I were to die tomorrow, you should have no difficulty understanding any decision I have taken". One is left to wonder if the two of them anticipated *post facto* audits of research that are sometimes undertaken these days. Other Fox attributes were: absolute scientific honesty – never looking askance at inconvenient or unexpected findings; perfection in quality of data collected, using numerous built-in checks and counter-checks; thoroughness in subsequent statistical analysis – he held the view that data could be never over-analyzed, considering the great cost involved in collecting it; and candid description of all problems and difficulties faced, without undue concern about ruffling feathers. He insisted on advance tabulation plans being made for all analyses, so that the temptation to formulate hypotheses after seeing the results could be avoided. All these are well-accepted procedures today with GOPs and SOPs in plenty, not really known in the 1950s.

Fox was neurotic about perfection in preparing scientific reports. He made it mandatory for draft reports to be circulated to all senior staff, giving a firm dead-line for their suggestions, even if they be on just spelling, grammar or syntax! He would personally read drafts over and over again, and get his typist to re-type the 'improved' versions (no computers and Microsoft WORD those days), and once remarked, not entirely in jest, that he could even annotate his reprints! He insisted that the primary author should check the appropriateness and accuracy of all references, and not lift them from published papers. He made it standard practice for staff aspiring to present papers at Conferences to have numerous rehearsals with all senior staff present. This substantially improved the quality of the presentations

and the critical appraisal abilities. He used to jokingly recommend that one could have private rehearsals at home as well, with the spouse for audience or, if this was not feasible, in front of even a blank wall!

According to Prof. Mitchison, another of his lifelong collaborators, Fox had the rare ability of foreseeing problems long before others did, and evolving appropriate solutions. Apart from his vast knowledge and intelligence, Fox had loads of enthusiasm, which he readily imparted to all who worked with him. He was tall, handsome and debonair, a charismatic team-leader who practised what he preached and respected coworkers regardless of their official position. He had an uncanny ability to make people do what he wanted, but never by authority or dogma, only by unrelenting logic. It was no surprise then that he became a Pied Piper of sorts. It is known that senior staff members were persuaded to postpone by a year international fellowships awarded to them so that the Project's interests would be better served. His middle name might well have been Speed, for he was impatient and demanding. He was highly self-disciplined and believed that "Hard work never killed anybody", but inflicted maximum punishment on himself. There was one occasion when, as a return favour, he undertook to read 22,000 small X-ray films during his spare time at home, and that after a grueling 12 hours at the office each day.

Fox's greatest contribution in the field of tuberculosis is the randomized control trial of home and sanatorium treatment, which demonstrated that treatment at home for a year was as effective as at a sanatorium, with no additional risk accruing to close family contacts of infectious patients treated at home. This finding revolutionized the management of tuberculosis in India and other developing countries, and had great impact on WHO policy. Equally important is his path-breaking study in the 1960s that demonstrated that fully supervised intermittent chemotherapy for a year was at least as effective as standard oral chemotherapy for the same duration. This finding was later to become the corner stone of the current global DOTS strategy. Fox used the RCT in a novel Operational Research application to solve practical management problems such as accurate address-taking of patients in Indian conditions and procedures for retrieving defaulters. No less significant were his efforts in installing serious research culture amongst national staff, and the development of a first rate infrastructure; Tuberculosis Research Centre, Madras that is today regarded as

the Mecca for tuberculosis research. His diplomatic skills need special mention. He made a mockery of the saying "No man can serve two masters", by managing to satisfy four (WHO, BMRC, ICMR, Madras State Government), as the Centre was a collaborative venture; not surprisingly, that this unique experience became a successful management case study.

On the personal side, Fox had the ability to make strong contacts outside of the U.K. and sustain them with warmth over decades. He was a good host, enjoyed reading books on art and culture, a connoisseur of classical music, a lover of Indian cuisine and south Indian coffee, and a great cricket fanatic. He interacted closely with Dr P.V. Benjamin (TB Advisor), Dr C.G. Pandit, Dr C. Gopalan, and Dr V. Ramalingaswami (ICMR Directors-General). He was immensely respected by Dr K.S.Sanjivi and Dr K.V. Thiruvengadam (TB experts in Madras), and honoured by a Ranbaxy Robert Koch Oration award of the TAI.

Many things have changed since Fox headed the TB Research Centre in Madras in 1956-61. For instance, Internet has brought entire libraries into our drawing rooms, WORD has made typists near-redundant, and the world has become a global village with foreign exposure becoming the norm rather than the exception. But the sound basics - the paramount importance of an inquiring mind, hard work, perseverance, enthusiasm and the ability to pull weight as a member of a team still persist. These are attributes that have been highlighted by the life, achievements and teachings of Wallace Fox, and constitute a golden legacy for which all researchers should be eternally grateful.

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