PERINATAL LESSONS FROM THE PAST

Dr William Farr of Shropshire (1807–1883): obstetric mortality and training

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William Farr, chief statistician to the General Register Office for more than 40 years, was the most significant medical epidemiologist and statistician of the Victorian era. Often working behind the scenes, he helped to bring about many advances in hygiene and public health as well as developing a modern approach to the classification of disease and the collection and analysis of medical information data.

William Farr was born on 30 November 1807 at Kenley, a village in Shropshire. His grandfather was a farmer, but his parents were young and poor, and at the age of 2 he, their first child, was adopted by Joseph Pryce, the benevolent and elderly squire of the village of Dorrington, 6 miles south of Shrewsbury. His education at the local village school was supplemented by wide reading in his benefactor's library. At the age of 19, he decided to become a doctor and studied anatomy and surgery under Dr Webster of Shrewsbury, walking (later riding) the 14 miles to and from the infirmary each day. In 1829 Joseph Pryce died leaving William £500 to further his education. As a result he was able to study at University College, London and then at Paris University, where he first began to be interested in hygiene and medical statistics. In 1831 after 6 months as a locum house surgeon in Shrewsbury, he returned to University College and in 1832 acquired the LSA qualification at the Apothecaries Hall. The following year he married a farmer's daughter, Miss Longford of Pool Quay on the Severn, and they settled in Grafton Street, London. During the next few years, Farr supplemented his income by writing and lecturing on vital statistics, hygiene, and public health. He was one of the first to do so and his talents came to be known to Dr Wakely, editor of the *Lancet*. In 1837, the year his wife died of tuberculosis, he assisted Sir James Clarke to write an article on consumption. Clarke was so impressed that, when the civil registration of births, deaths, and marriages was introduced in 1837, he and Dr Wakely recommended Farr for the post of compiler of abstracts in the General Register Office. He was appointed on a salary of £350 a year and for the next 40 years devoted himself to creating and developing a national system of vital statistics and to improving public health and hygiene.^{1–4}

Farr's contributions were enormous as he explored and interpreted the accumulating mass of national data. He pioneered a whole range of epidemiological activities to describe the state of health of the population, to establish the determi-

Figure 1 Dr William Farr (1807–1883).

nants of public health and to use the knowledge gained to prevent and control disease.^{2,3} His nomenclature and classification of disease, accepted by the International Statistical Congress in Paris in 1864, remains the bedrock for the International Classification of Diseases, now in its 10th revision.⁵ Farr's analysis of specific causes of disease was perhaps his single most important contribution to British vital statistics. In 1839 he had written⁶:

"The advantages of a uniform statistical nomenclature, however imperfect, are so obvious, that it is surprising no attention has been paid to its enforcement in Bills of Mortality. Each disease has, in many instances, been denoted by three or four terms, and each term has been applied to as many different diseases: vague, inconvenient names have been employed, or complications have been registered instead of primary diseases. The nomenclature is of as much importance in this department of inquiry as weights and measures in the physical sciences, and should be settled without delay."

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Early on, Farr was alert to the germ theory of Henle (1840). Later he provided the tabulations that enabled John Snow to formulate his theory on the crucial role of water supplies in the cholera epidemics of 1845 and 1853, and his attack on the water companies in the 1860s did much to bring about reform. His general law of epidemics, known as Farr's Law, which was based on the smallpox epidemic of 1840, enabled him to predict the early subsidence of the devastating cattle plague of 1865/66.⁴

In 1864 Farr was the first to publish work containing material calculated and printed by a machine, Scheutze's Difference Engine. Its design was based on Charles Babbage's earlier Difference Engine (1815), forerunner of the computer. Farr had seen it at the Paris Exposition in 1855 and persuaded Bryan Donkin & Co to build one in England. It cost £1200, comprised 4320 parts, and weighed nearly 10 cwt. Farr used it to calculate life tables based on 6 470 720 deaths in England between 1841 and 1851.⁷

With respect to childbirth, Farr drew attention to the appalling maternal and infant death rates and admonished the Royal Colleges for failing to train doctors and midwives in obstetric practice as the following extracts reveal.

On the mortality of childbirth²

"Childbirth is of course a physiological process, and under favourable conditions, where the mother has been taken proper care of, is attended with little danger. Unfortunately English mothers do not escape scatheless; nor can this be expected under existing circumstances; 3875 mothers died during 1870 of the consequences of childbirth . . . in the four years 1867–70, the deaths (were) 45 (annually to every 10,000 children born alive)."

"In the five years 1872–76, of the 23,051 deaths in childbirth, 10,498 were referred to puerperal fever, 8,400 to specific diseases or injuries, and 4,153 to causes not specified . . ."

"The stillborn children in England are not registered; and a certain number of infants that breath for a short time are, it is believed, to save the burial fees, interred as the stillborn children are buried, and so escape registration . . ."

"The high rate of infant mortality continues to occupy the earnest attention of medical statistics. The death-rate of infants in England and Wales in 1875 was 158 per 1,000 . . . Some of the principal causes are improper and insufficient food, bad management, use of opiates, neglect, early marriages, and debility of mothers; but whatever may be the special agencies at work which are so prejudicial to infant life, it must be borne in mind that a high death rate is in a great measure also due to bad sanitary arrangements."

On hospitalising childbirth²

"The error of collecting poor lying-in women into hospitals has been discovered, and to some extent discouraged . . . Seeing how destitute of comforts, means, and medical appliances many women are, the thought occurred to some benevolent person that they might be received and delivered in hospitals . . . Contrary to expectations the advantages these institutions offered were overbalanced by one dreaded

drawback, the mortality of mothers was not diminished, nay, it became (due to infection) in some instances excessive, in other instances appalling."

On training for midwifery and obstetrics²

"A large proportion of the mothers of England have been, from time immemorial, attended by midwives: and this is an excellent and natural arrangement . . . Until lately it was assumed that midwives were born, not made, (and) their professional education was wholly neglected or left to chance . . . the midwife should be taught all the mechanical part of the art, and be thoroughly initiated into the practice of health-keeping, she would then be in a position to render her sex essential service . . ."

"There is no examination in midwifery for the membership (of the Royal Colleges) . . . Thus a registered MRCS, without any other qualification, has passed no examination in midwifery. Many are in large and successful midwifery practice; others, it is to be feared, must labour under disqualifications, disadvantageous to themselves and their patients. Under this state of things 4,610 mothers died in childbirth annually in the five years 1872–76. What number of these lost lives, have we any reason to believe, would have been saved had all been watched over by skilful midwives acting under skilful physicians?"

Farr served on many government committees, including being census commissioner for 1861 and 1871. In 1856 he was nominated by Florence Nightingale on her return from the Crimea to serve on a royal commission to enquire into the health of the army both at home and in India. In 1855 he was elected a fellow of the Royal Society and in 1871 became president of the (later Royal) Statistical Society. He was described by his long time colleague, Noel Humphreys,² as a man with a genial face and a hearty spontaneous laugh (fig1). He was devoted to his home and indulgent to his family. His tastes were simple and he loved children. He was modest and unassuming and took great pleasure in friendship. Appreciating merit in others, he was free from jealousy. A better listener than talker, he had a tremendous capacity for complete absorption in his work. In spite of slight educational advantages, he was a man of genius. Self taught, he was a thorough mathematician and accomplished linguist in German, Italian, French, and the classic languages. His mind was large and open and he took a broad and liberal view on social and political problems. He had a love of all things beautiful and fine in art and literature.

In 1841 William had moved to Stoke Newington and married a Miss M E Whittall of Shropshire. His first marriage had been childless, but his second brought eight children, of whom a son and four daughters survived him. In 1846 the family moved to Melina Place, St John's Wood, and then in 1860 on to Bickley in Kent. His health was excellent until 1876 when his wife died. He had hoped to obtain the post of Registrar General when Major Graham retired in 1879, but on failing to be appointed, he resigned the following year. Three years later he died at the age of 76 on 14 April 1883 and was buried with his wife at Bromley Common Church. A testimonial fund was set up after his death to give support to his daughters, and some £1500 was raised. The most generous contribution came from Florence Nightingale who gave £110. So passed perhaps the greatest medical statistician and epidemiologist the world has seen, a man that also contributed enormously to the sanitary and public health reforms of the 19th century.¹⁻⁴

REFERENCES

- 1 **William Farr**, obituary. *Lancet* 1883;i:800–1.
- 2 **Humphreys N (ed)**. *Vital statistics, a memorial volume of selections from the reports and writings of William Farr, MD, DCL, CR, FRS*. Introduction by N Humphreys. London: Sanitary Institute, 1885.
- 3 **Susser M**, Adelstein A. Introduction. In: Humphreys N, ed. *Vital Statistics. Vital statistics, a memorial volume of selections from the reports and writings of William Farr, MD, DCL, CR, FRS*. London: Sanitary Institute, 1885. Reprinted New York: Scarecrow Press, 1975:iii–xiv.
- 4 **Halliday S**. William Farr: a campaigning statistician. *Journal of Medical Biography* 2000;**8**:220–7.
- 5 *International statistical classification of diseases and related health problems*. 10th revision. Geneva: World Health Organisation, 1993;**2**:139–40.
- 6 **Registrar General of England and Wales**. *First annual report*. London: Registrar General of England and Wales, 1839:99.
- 7 **Farr W**. English life table. *Tables of lifetimes, annuities, and premiums* [with an introduction]. London: HMSO, 1864.

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