

Early use of ‘open-air’ treatment for ‘pulmonary phthisis’ at the Dreadnought Hospital, Greenwich, 1900–1905

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Summary

The use of open-air treatment for tuberculosis (‘pulmonary phthisis’) at the Dreadnought Hospital, Greenwich from 1900 to 1905 is reviewed. A marked reduction in mean mortality rate compared to ‘orthodox’ management was observed.

Keywords: history of medicine; open-air treatment; pulmonary phthisis; tuberculosis

Although the causative agent of human tuberculosis had been identified by Robert Koch (1843–1910) in 1882,^{1,2} it was not until some 60 years later that an effective chemotherapeutic agent (streptomycin) to combat this infection was introduced. During these years numerous sanatoria were established, both throughout Britain³ and in other countries; the underlying rationale for this development lay in the fact that a ‘change of air’ to, for example, the dry, warm Mediterranean littoral or various alpine resorts (only affordable by the wealthy), had been associated with beneficial results.

John Coakley Lettsom (1744–1815), a fashionable Quaker physician (who founded the Medical Society of London in 1773) had introduced exposure to ‘open-air’ for patients suffering from scrofula at the Royal Sea Bathing Infirmary, Margate as early in 1791. A similar strategy for patients suffering from ‘pulmonary phthisis’ had been initiated between 1840 and 1843 by George Bodington (1799–1882) at Sutton Coldfield. However, it was not until the latter days of the nineteenth century that open-air treatment for this disease became ‘respectable’, and even then it was only available to the wealthier members of society. Several members of the medical staff of the Dreadnought Hospital, Greenwich (under the auspices of the Seamen’s Hospital Society) pioneered this technique in seafarers serving in the Mercantile Marine (figure 1). But was there any evidence for its superior efficacy when compared with the orthodox management of the day?

Figure 2 summarises data on admission rates (and deaths) from ‘pulmonary phthisis’ recorded in successive General Reports of the Seamen’s Hospital Society between 1890 and 1905^{4–17}; the mean annual admission rate was 103, and death rate 24, ie, almost one-quarter of diagnosed cases died. Five successive annual reports^{18–22} summarise the Dreadnought experience with the new ‘open-air’ technique (which lasted for 80–90 days) from 1900 to 1905. In every case, *Mycobacterium tuberculosis* had been demonstrated in a sputum-sample. The results (annual admission and death rates) are summarised in table 1. The mean mortality rate was approximately 11%, which was markedly lower than that when orthodox measures were employed (see above). Furthermore, a general



Figure 1 The ‘Ranlett’ Ward for open-air treatment of phthisis was situated on the roof of the Dreadnought Hospital, Greenwich^{18–21}

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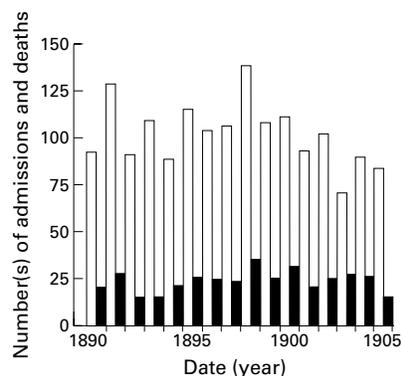


Figure 2 Number(s) of cases of 'pulmonary phthisis' admitted to the Dreadnought Hospital, Greenwich (white columns) between 1890 and 1905. Numbers of deaths are shown by black columns. Mean mortality rate, 23.6%

Table Annual numbers of admissions (and deaths) due to 'pulmonary phthisis' using the 'open-air' technique (1900–1905)^{18–22}

| Date | No treated | No remaining under treatment at year end | No deaths | % deaths* |
|---------|------------|--|-----------|-----------|
| 1900–01 | 45 | 11 | 6 | 13.3 |
| 1901–02 | 56 | 9 | 7 | 12.5 |
| 1902–03 | 48 | 10 | 6 | 12.5 |
| 1903–04 | 57 | 10 | 6 | 10.5 |
| 1904–05 | 52 | 12 | 4 | 7.7 |

*Mean mortality rate, 11.3%

improvement in the overall state of 'well-being' was noted to be more common in those undergoing 'open-air' treatment.

Clearly, this study does not stand up to present-day scientific scrutiny. How, for example, were cases selected for 'open-air' treatment? Owing to difficulties involved in monitoring the health of seafarers, there was also very little long-term follow-up.^{19 20} However, the result was entirely in keeping with contemporary opinion which was leading to the evolution of more sanatoria for patients suffering from 'pulmonary phthisis' in many parts of Britain. Although some general hospitals had begun accepting patients with 'pulmonary phthisis' as early as 1899 (Sheffield Infirmary and the Royal Berkshire Hospital, Reading, are but two examples³) such institutions were at the time exceptional. This fact is borne out by the authors' indication that it was impossible to find accommodation for long-term (convalescent) management following the period of 'open air' treatment at the Dreadnought Hospital.²¹

The authors of the 1901 Dreadnought experience¹⁸ concluded:

"When it is considered that a large proportion of Phthisical cases reach the Dreadnought in a poor state of general health, and often with the disease already far advanced, we venture to think that the results have not been unsatisfactory, and we trust the Governors will consider that they justify the facilities they were good enough to afford us for carrying out this plan of [open air] treatment."

The experience of the Seamen's Hospital Society's Medical Officers must therefore have engendered a good deal of optimism for the new technique of open-air treatment in 'pulmonary phthisis' (overall mortality rate was less than half of that using orthodox measure), which was to last until the 1960s.

1 Dubos R, Dubos J. *The White plague: tuberculosis, man, and society*. London: Rutgers University Press, 1952; p 277.

2 Ryan F. *Tuberculosis: the greatest story never told*. Bromsgrove, Worcestershire: Swift Publishers, 1992; p 446.

3 Richardson H. Hospitals for infectious diseases. In: Richardson H, ed. *English Hospitals 1660–1948. A survey of their architecture and design*. Swindon: Royal Commission on the Historical Monuments of England, 1998; pp 132–53.

4 Smith WJ. *A general report of the cases under treatment at the Seamen's Hospital, Greenwich, together with an analysis of the medical and surgical cases*. Greenwich: EG Berryman and Sons, 1891; p 23.

5 Smith WJ. *A general report of the cases under treatment at the hospitals and dispensaries of the Seamen's Hospital Society, together with an analysis of the medical and surgical cases*. Greenwich: EG Berryman and Sons, 1892; p 29.

6 *Ibid* 1893; p 26.

7 *Ibid* 1894; p 24.

8 *Ibid* 1895; p 40.

9 Anon. *Tables of cases under treatment at the hospitals and dispensaries of the Seamen's Hospital Society, in 1895 and 1896*. London: EG Berryman, 1897; p 38.

10 *Ibid*, in 1897 and 1898. 1899; p 46.

11 *Ibid*, in 1899. 1900; p 32.

12 *Ibid*, in 1900. 1901; p 30.

13 *Ibid*, in 1901. 1902; p 32.

14 *Ibid*, in 1902. 1903; p 38.

15 *Ibid*, in 1903. 1904; p 36.

16 *Ibid*, in 1904. 1905; p 34.

17 *Ibid*, in 1905. 1906; p 33.

18 Hewlett RT, Rankin G. Report on the open-air treatment of phthisis at the Dreadnought Hospital, Greenwich. From the 1st November, 1900, to the 30th October, 1901. In: *Tables of cases under treatment at the Hospitals and Dispensaries of the Seamen's Hospital Society in 1901*. London: EG Berryman & Sons, 1902; pp 1–4.

19 Rankin G, Hewlett RT. Report on the open-air treatment of phthisis at the Dreadnought Hospital, Greenwich. From the 30th October, 1901 to the 30th October, 1902. In: *Tables of cases under treatment at the Hospitals and Dispensaries of*

the Seamen's Hospital Society in 1902. London: EG Berryman & Sons, 1903; pp 22–5.

20 Hewlett RT, Rankin G. Report on the open-air treatment of phthisis at the Dreadnought Hospital, Greenwich. From the 1st November, 1902, to the 31st October, 1903. In: *Tables of cases under treatment at the Hospitals and Dispensaries of the Seamen's Hospital Society in 1903*. London: EG Berryman & Sons, 1904; pp 21–4.

21 Hewlett RT, Rankin G. Report on the open-air treatment of phthisis at the Dreadnought Hospital, Greenwich. From the 1st November, 1903, to the 31st October, 1904. In: *Tables of cases under treatment at the Hospitals and Dispensaries of the Seamen's Hospital Society in 1904*. London: EG Berryman & Sons, 1905; pp 21–4.

22 Anon. Report on the open-air treatment of phthisis at the Dreadnought Hospital, Greenwich. From the 1st November, 1904, to the 31st October, 1905. In: *Tables of cases under treatment at the Hospitals and Dispensaries of the Seamen's Hospital Society in 1905*. London: EG Berryman & Sons 1906; pp 22–4.