DEATH, MEDICINE AND THE GRO

Anne Hardy

Wellcome Trust Centre for the History of Medicine at UCL

E-mail: a.hardy@ucl.ac.uk

This is an informal paper written in response to Anne Crowther’s request for reminiscences of my experiences with the GRO cause of death statistics for England and Wales, and given as an introduction to the Glasgow Centre for the History of Medicine’s workshop on historical statistics. The argument of the later section of the paper is articulated more formally in a ‘commentary’ published in Revue d’epidemiologie et sante publique in 2004.

Birth pains and death throes have been the business of medicine in one way or another for many centuries. It is, however, only in the last 200 years that the recording of births and deaths has taken on medical significance, and even more recently – in the last 30 years – that the nature of these records has become significant for historians. Interest in the compilations of the Registrar General for England and Wales really emerged only in the 1980s, while those of the Registrar General for Scotland have until now remained virtually unexplored territory. It may be fair to say that the trigger for interest in the former was the publication, in 1976, of Thomas McKeown’s Modern Rise of Population in which McKeown used the GRO’s historical mortality data to support his argument that
medicine had little to do with initiating the nineteenth-century decline in mortality.\textsuperscript{1} I had started work on my DPhil thesis the previous year. The thesis was about the management of infectious disease in later Victorian London, based on a study of three London districts, and I was grappling with the disjunctions between the GRO’s data and those used by the local medical officers of health.\textsuperscript{2} Stimulated and provoked by McKeown’s book, I was already doubtful about his use of those GRO statistical series. My medical officers’ reports contained enough caveats about the quality of different cause of death data to raise questions about the validity of medical diagnoses and the reliability of death certification, particularly in respect of certain crucial diseases, notably respiratory tuberculosis.

While I was labouring through crumbling volumes of sanitary committee minutes in a dusty basement archive without access to washing facilities at the Elephant and Castle, others too were taking a critical look at the GRO’s statistical series. Bill Luckin was the first to draw public attention to the problems of using these data. In a pioneering article in the \textit{Urban History Yearbook} for 1980, Bill noted the GRO’s annual and decennial reports as a fundamental source material for historians interested in disease and death, but he also noted their shortcomings. He warned that they should be approached with ‘a high degree of caution and scepticism’, and outlined three main problems: 1) the ever-changing categorization of disease in the first twenty odd years of registration (ie, 1838- c 1860) 2) the registration of deaths in the district where they occurred, rather than

in the district of residence 3) the absence of morbidity data. As I embarked on the research for *The Epidemic Streets* in the early 1980s, chewing (and it often felt like chewing) my way steadily through MOH reports for London, and the GRO’s annual and decennial reports, I added other concerns to Bill’s list: non-certification of cause of death; the continuing uncertainty of many 19th century medical diagnoses after 1860, especially in respect of the chronic and degenerative diseases; the failure to standardise death rates for comparative purposes; and problems caused by boundary allocations and boundary changes to registration districts. I also, mistakenly - as Eddy Higgs later pointed out – noted a discontinuity in the publication of the GRO series between 1848 and 1855 – a mistake which I freely admit sprang from the arrogance of the Oxford educated, in assuming that the Bodleian’s resources must be beyond reproach: in fact, the GRO reports for those years had apparently not been included in the relevant volumes of Bodley’s bound set of Parliamentary Papers. It never occurred to me to check for those reports elsewhere.

Meanwhile interest in the GRO and its series was growing. Somewhere in the early 1990s – I think perhaps in the September 1991 or 1992 – Eddy summoned a small workshop on the subject in Cambridge where several projects and issues were discussed - I remember that participants included, besides Eddy and myself, Bob Woods, Irvine Loudon, and Simon Szreter. As a result of that meeting, I published – courtesy of Anne Crowther’s editorship - an article in *Social History of Medicine* on the shortcomings of the GRO series, following up on the notes I had already appended to the Epidemic

---

streets.\(^4\) I then abandoned the interrogation of death and cause of death statistics with a sigh of relief, and turned my attention elsewhere. Wrestling with figures had never been a strong point of mine - I failed maths O level the first time of taking - and in those days before modern computer software, and armed only with a pocket calculator, the negotiation of statistical series was a real ordeal – as Bill Luckin and I have been able to agree. I reckon I got the *Streets* out just in time. Within a few years the software revolution raised statistical calculation to a level of sophistication that is way beyond my capabilities – let alone technical comprehension. I have, however, watched developments on that front with admiration and interest, more especially as I have followed the career of Graham Mooney - once the student of Bob Woods and Gerry Kerns, whose thesis I examined in 1994. The astonishing results obtainable by modern computerised methods are becoming apparent as the results of the London Mortality project, on which Graham worked with Andrea Tanner and Bill Luckin, find their way into print.

A few years ago, however, my attention was again – somewhat reluctantly – returned to the topic of GRO statistics by Dave Leon and George Davey-Smith, who had become interested in setting up a major project on mortality in the 20\(^{th}\) century. The project failed to obtain funding from the Wellcome Trust, but putting together the grant application did have the effect of taking me back to consideration of the GRO materials – and indeed, to thinking about mortality patterns in the 20\(^{th}\) century. With *The Epidemic Streets* my focus had been on the infectious diseases – the 20\(^{th}\) century Mortality Project was to

focus on the chronic diseases - on 8 key tracer conditions - tuberculosis, coronary heart disease, cancer of the stomach, lung and female breast; stroke, peptic ulcer, chronic rheumatic heart disease and chronic obstructive pulmonary disease. The exercise brought me squarely back to the issue of the GRO statistics, and the dependence which historians of mortality can place on them - of the statistics as cultural artefacts. Over and above the problems identified by Bill Luckin and myself for the 19th century figures, consideration of the 20th century data highlights the problematic and significant relationship between medicine – that is to say, the medical men who provide the basic data of the statistical series – and the finished, published data themselves. The problem of changing nosologies, and the now well recognised struggle of the various Registrars-General to clarify and precision the returns made by certifying practitioners, are a part of this relationship – it’s upper layer, as it were. The roots and ramifications go deep, however, into the very character of the medical profession and the situation of medicine itself at any one precise historical time.

The GRO was set up in 1837, just at the period when the medical profession was taking its modern form. Doctors were ceasing to be trained by apprenticeship, in a direct line from previous generations of practitioners, and were increasingly taking or finishing their training in medical schools. Following the Medical Act 1858, orthodox practitioners had to have qualified from a recognised medical school to get their names on the Medical Register. What was taught in the medical schools, and how this reflected the current state of medical knowledge, of diagnostic technologies and techniques, shaped the clinical judgments of practitioners trained in the schools. Thus, as William Ogle of the General Register Office noted of the rising tide of recorded deaths ascribed to
renal disease, the founding of the GRO coincided with Thomas Bright’s publication of his discovery of ‘the very common diseases which have ever since borne his name’. There could be no reasonable doubt, according to Ogle, that the apparent increase of nearly 200 per cent in renal deaths registered between 1840 and 1880 was ‘attributable to a gradual extension of the knowledge of Dr Bright’s discoveries, and the recognition of cases as renal that previously were attributed to other causes’. In the early twentieth century, John Tatham similarly observed that analysis of the deaths from cancer according to body site demonstrated that the increase in recorded deaths was largely due to the more frequent detection of internal cancers as a result either of surgery or of post-mortem examination. By 1920 the differential impact on male mortality was being highlighted: ‘The proportion of growths inaccessible to direct examination is much higher in the male’. The march of modern medicine, with rising rates of surgical intervention, and an avid interest in the pathological knowledge to be obtained by autopsy, was making its mark on the statistical data. A decade later, T H Stevenson again drew attention to the role of ‘aids to medical diagnosis’ in increasing the number of certifications from diabetes and Bright’s disease. Increases in angina pectoris and valvular disease of the heart might similarly, he argued, be ‘safely’ dismissed as due ‘merely to increased definiteness in certification’, since diseases of the heart and circulation as a whole showed considerable reduction.

---

5 Registrar-General’s Decennial Supplement, PP 1884-85, xvii, p. xvi.  
6 Registrar-General’s Decennial Supplement, PP 1905 xviii, p. c.  
7 Registrar-General’s Decennial Supplement, 1921, part III, p. cix.  
8 Registrar-General’s Decennial Supplement, PP 1914-16, viii, p. liv.
Medical judgments were not only shaped by education, but also by individual receptiveness to the new techniques publicised in the medical literature, notably in influential journals such as the *Lancet* and the *British Medical Journal*. Personal experience, medical school training and, indeed, generational ethos, can all be seen to have played a role in influencing death certification practices at local level. The importance of the last was underlined in 1967 by the Medical Officer of Health for the London borough of Ilford, Israel Gordon. Gordon conducted a 14-year-long local study of deaths from coronary heart disease within that borough between 1951 and 1964. His account of this study serves to underline both the importance of medical cultures in shaping diagnostic practices, and the frailty of the GRO statistical series. Gordon found enormous variations in the extent to which Ilford doctors certified coronary heart disease. In each of the time periods covered by his study, about one third of all Ilford doctors certified no deaths as occurring from CHD at all. He explained this by reference to a contemporary American study, which had also found considerable variation in diagnostic criteria for CHD, especially among more elderly doctors who worked on their own. Significantly, Gordon found that in Ilford older practitioners were more conservative in their judgments and required strong clinical or other evidence of the disease in order to certify. Younger doctors, however, had a wider diagnostic concept, and tended to include all sudden deaths of unknown causation in this diagnostic category. Thus the age structure of a medical profession, the nature of individual practice, and the related background of training and medical knowledge of different cohorts of practitioners, can be seen to have a strong influence on how deaths are certified.

---

Gordon also raised questions about comparative international certification practices which may have some – perhaps small –bearing on potential comparisons between Scotland and England and Wales. As Gordon pointed out, different countries have different diagnostic emphases, which undermine the usefulness of national statistical series for international comparisons. The differences between Scotland and England and Wales may be less acute, than those say, between Scotland and France, given the educational exchanges between the two countries, but cohort studies of local medical practitioners would be a necessary foundation for examining local medical cultures in respect of certification. The example of coronary heart disease in the 1950s furnishes an interesting example of the confusion which different diagnostic practices can generate. Thus the American Heart Association stated that the toll of cardio-vascular disease in the USA was greater than that in most of Europe, being about double that of Scandinavia, France, Italy, the Netherlands and the German Federal republic. The WHO on the other hand, declared a rather different order of descending incidence: Scotland stood at the head of the list, followed by Ireland, West Berlin, England and Wales, and then the USA. Finland meanwhile claimed for itself the highest European CHD mortality.\(^\text{10}\)

The roots of this confusion in priority claims to highest CHD incidence clearly lay in differing national certification practices and national medical cultures. Thus the reported low incidence of CHD in 1950s France was said by French observers to be due to certification habits, while it was noted in Scandinavia that the nomenclature of

\(^{10}\) Ibid., p. 67.
certification was gradually changing from ‘senility’ to ‘heart disease’. Interestingly, this change was occurring more rapidly in the towns than in the countryside. This observation raises a number of questions: Do doctors divide into town mice and country mice when it comes to diagnostic and certification practices? Are the more dynamic, alert and up-to-date practitioners generally to be found in urban areas? Could there be significant differences in certification practice between rural areas popular and well supplied with doctors, like England’s West Country, and areas poorly supplied, like rural Wales or Northumberland? Are there differing regional medical cultures as well as generational and urban/rural ones?

Returning to Gordon’s analysis, we find that it covers a number of other issues in respect of CHD certification, including the proportional frequency of autopsy, and changes in certification requirements. For example, CHD certifications from Ilford’s two psychiatric hospitals fell markedly after the requirement for a coroner’s inquest on hospital deaths of all certified patients and of all uncertified patients who were to be cremated, was dropped. Having, I think, successfully demonstrated the fragility of CHD certification at the local level, Gordon concluded, as in part other observers have done before and since:

Nevertheless, death certification is universal, is a statutory obligation, and in Britain, where we all have access to hospital, and where the coroner’s pathologist is the CHD expert, it is of reasonable repute, so we had better accept it, and, as I have tried to do, stimulate its improvement, for we have no alternatives.

---

11 Ibid., p. 69. For a similar observation on British practice see Notes of the Week, ‘Heart disease or senility?’, ibid, 60 (1938), p. 171.

Gordon’s reservations over the certification of CHD deaths in the 1950s can be extended to other causes of death, and to other eras. None the less, it is worth noting one of his final assessments – and one that he took the trouble to re-emphasise:13

In England and Wales [and no doubt in Scotland?] much useful and reliable information can be obtained from these certificates, especially if studied in the light of local knowledge. [My Italics]

The evaluation and assessment of the GRO’s cause of death statistics thus becomes a long and winding road. It takes us from the starting point of changing nosologies to the judgments of certifying individuals and the medical culture within which the statistics were generated, and into the structure and background of local populations of general practitioners. Whatever tweakings the GRO’s officials have accomplished in the way of making certifications more precise, there has not been much they could do if individual practitioners for their own good reason chose not to use certain diagnostic categories. Although there are problems also in using the GRO’s series for both births and marriages, it seems fair to say that they pale beside those of death, and more especially, of cause of death. Death is a hard fact, but cause of death is a matter of medical judgment, in which some decisions are relatively uniform across a profession, and others extremely fluid. Certification of cause of death ultimately takes the historian into the very personal world of individual clinical judgment, and of all the various influences that shape that judgment across the course of a practitioner’s lifetime. Bill Luckin’s warning of nearly 25 years ago – that these statistics should only be used with great caution and scepticism only acquires edge with the years. The more one considers how the GRO’s mortality series were constructed, the more they become nothing more nor less than artefacts, the

13 Ibid.
productions of a rich and varied medical culture which itself could usefully do with extensive investigation.\textsuperscript{14}

\textsuperscript{14} See also A. Hardy, ‘Commentary: Macro-epidemiology and the lessons of history’, Revue d’epidemiologie et sante publique, 52 (2004): 353-356