



The wealth of distinguished doctors: retrospective survey

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Professional matters

The wealth of distinguished doctors: retrospective survey

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Objective To assess changes in the wealth of distinguished doctors in the United Kingdom between 1860 and 2001.

Design Retrospective survey.

Setting The UK.

Participants 980 doctors of sufficient distinction to be included in the *Oxford Dictionary of National Biography* and who died between 1860 and 2001.

Main outcome measures Wealth at death, based on probate records and adjusted relative to average earnings in 2002.

Results The wealth of distinguished doctors declined substantially between 1860 and 2001, and paralleled a decline in the relative income of doctors in general. The wealth of distinguished doctors also declined relative to other groups of distinguished individuals.

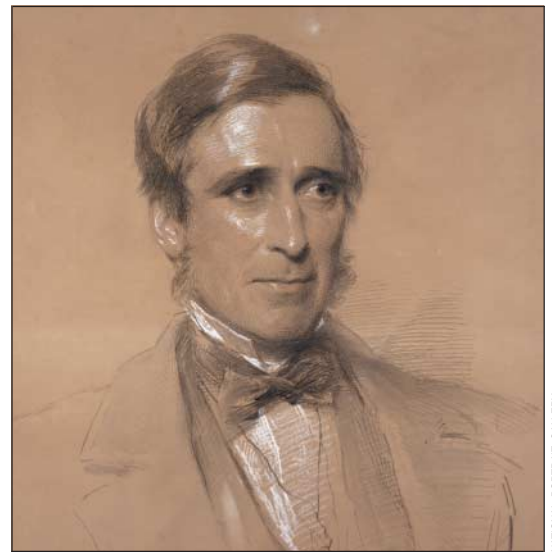
Conclusions In the 19th century, distinction in doctors was accompanied by substantial wealth, whereas by the end of the 20th century, the most distinguished doctors were less wealthy than their contemporaries who had achieved national distinction in other areas.

"Education in . . . the liberal professions is . . . tedious and expensive. The pecuniary recompense, therefore . . . of . . . physicians ought to be much more liberal; and it is so accordingly."

Adam Smith, *The Wealth of Nations*, Bk IX (1776)¹

Sir James Paget, one of the great 19th century surgeons, died on 30 December 1899, leaving an estate valued for probate at £74 861, or about £26m at 2002 prices. A profession in Victorian Britain, as the novelist Anthony Trollope wrote, was "a calling by which a gentleman, not born to the inheritance of a gentleman's allowance of good things, might ingeniously obtain the same by some exercise of his own abilities"² (and as Alan Hollinghurst reminds us in *The Line of Beauty* "Trollope's . . . very good on money"³).

Paget's wealth prompts a series of questions about the wealth of doctors. I had become interested in him while studying his work on medical education,⁴ carried out in collaboration with Sir Thomas Smith and Mr George William Callender, fellow surgeons at Bart's. Smith died in 1909, at the age of 76, and was richer still than Paget, with wealth valued at £101 245 1s 9d (£33m at 2002 prices). Callender, who died in 1878 at the earlier age of 48, was less wealthy, with probate stated as "under £3000" (£1.2m at 2002 prices). Were Paget, Smith, and Callender special because they were



NATIONAL PORTRAIT GALLERY

Sir James Paget—enriched by surgery

surgeons? A previous interest of mine was Sir Thomas Watson,⁵ writer of one of the most successful Victorian textbooks of medicine,^{6 7} president of the Royal College of Physicians, and the author of an important early study of situs inversus.⁸ At his death in 1882, his wealth was £164 407, equivalent to £68m in modern terms. All these doctors were rich men.

Several questions arise. How typical was Paget? How did his wealth compare with other distinguished men of the Victorian era (and almost all were men)? And how did the wealth of distinguished doctors fare into the 20th century? As will be seen below, Paget was not unique among Victorian doctors: he was not rich because he was a surgeon but because he was a hospital doctor, and distinguished doctors in the 20th century fared progressively less well financially.

The recent publication of the *Oxford Dictionary of National Biography* allows an answer to such questions, not only by identifying major contributors to national life but by its systematic inclusion of probate records.⁹

Method

All monetary values are quoted both in actual value as of the year to which they apply, and relative to modern prices calculated against average earnings, using the



Further information, figures A-C, and references 1-25 are on bmj.com

calculator at <http://eh.net/hmit/ukcompare>, where the most recent values are for 2002. The calculation of relative worth is complex (see supplementary information on bmj.com), and the calculator provides five different estimates. Paget's probate of £74 861 in 1900 can be calculated relative to a retail (consumer) price index (RPI), giving a 2002 value of £4.9m; a gross domestic product (GDP) deflator, an index of all prices in the economy, giving a 2002 value of £6.1m; average earnings, giving a 2002 value of £25.9m; GDP per head, giving a 2002 value of £28.9m; and GDP overall, giving a 2002 value of £41.6m. Each adjustment method has its advantages, but an index relative to average earnings is recommended for comparisons involving relative purchasing power in relation to differences in earnings and wealth,¹⁰ and I use this for the rest of this paper, referring to it as $Wealth_{2002}$ or $£_{2002}$.

Statistical analysis

Analyses of wealth typically find a distribution with a long tail of extremely high values, and it is therefore convenient to plot these as logarithmically transformed data.¹¹ I used the calculator available at www.wessa.net/co.wasp to calculate the Gini coefficient, a measure of inequality. A value of 1 indicates maximum inequality, with all wealth in the hands of a single individual, and an index of 0 indicates complete equality of resources.¹² Interpreting the Gini coefficient is acknowledged to be problematic,^{13 14} but its overwhelming popularity¹³ makes it the obvious descriptive statistic. To show the extent of inequality I have used Lorenz curves, which are easily interpreted (see fig B bmj.com).¹⁴

Results

The *Oxford Dictionary of National Biography* in its update of 4 January 2005 contains biographies of 55 525 individuals, 5671 of whom are female. Official records of wealth at death, typically probate, are available for 17 081 individuals, 2166 of whom are female. Of these, 1205 are for those under the dictionary's subheading of medicine, and 1190 were individuals dying after 1830, the earliest date for which eh.net/hmit/ukcompare provided comparisons of monetary values. These 1190 individuals formed the basis of the present study.

Of the 1190 individuals in the medicine category, 210 did not have medical qualifications, and, of these, 87 (41.4%) were women. The group consisted primarily of nurses, midwives, speech therapists, almoners, and social workers (57); scientists (48); psychologists and educationalists (29); veterinary practitioners (19); pharmacists (12); dentists (11); and a miscellaneous group of others, including Dr Stephen Ward (1912-63), "osteopath and scapegoat." The non-medical category also contained the five wealthiest people in the entire medicine category, James Eno (who produced "Eno's Salts"), William Smith (the hospital reformer and son of W H Smith, the newsagent), Sir Henry Wellcome (the pharmacist and benefactor), John Johnston (the manufacturer of Bovril), and Thomas Holloway (whose pills and ointments eventually funded the college of Royal Holloway, in the University of London), who were worth $£_{2002}$ 412m, $£_{2002}$ 379m, $£_{2002}$ 314m, $£_{2002}$ 295m, and $£_{2002}$ 251m.

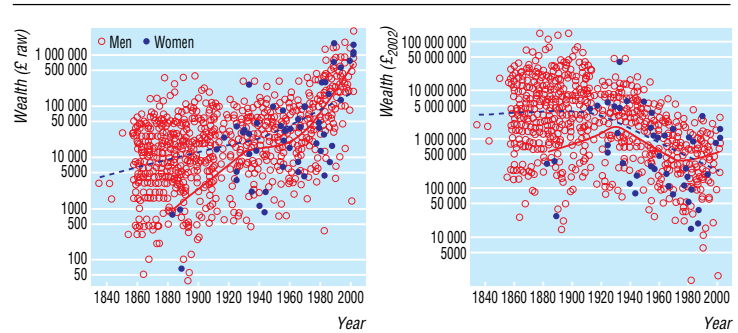


Fig 1 Wealth at death of distinguished doctors in absolute terms (left) and relative to average earnings (right)

Secular trends

The medicine section contained 980 medically qualified people, of whom 63 (6.4%) were women, and these form the basis for the rest of this paper. Absolute measures of wealth at death (fig 1, left), show a clear increase across years. However, the average earnings adjusted values in figure 1 (right) show a very different picture, with the relative wealth of distinguished doctors declining over the period, particularly from about 1900 onwards. Male and female distinguished doctors show no statistical differences in wealth, and sex differences will not be considered further here.

Inequality

The table $Wealth_{2002}$ gives mean and Gini coefficient in relation to year of death. Average wealth drops dramatically in the 20th century, as does the wealth of the richest groups. The Gini coefficient shows a systematic decline between 1880 and 1980, indicating a reduction in the extent of inequality, which parallels general changes in income distribution over the same time period.¹⁵

Specialty differences

Figure 2 shows the relative earnings of different medical specialties, expressed as a standardised residual of $\log_{10}(Wealth_{2002})$, taking year of death and age at death into account. The differences between specialties are highly significant (analysis of variance; $F(6,978)=7.36$, $P<0.001$). Post hoc tests for differences between the specialties showed that physicians, surgeons, and obstetricians were significantly wealthier than other groups, and the group containing general practitioners and others had lower wealth than the others.

Comparison with other occupational groups

The *Oxford Dictionary of National Biography* classifies its entries into 25 non-mutually exclusive fields of interest, some of which can be broadly regarded as occupational categories (but not others, such as "law and

Mean wealth at death of distinguished doctors, relative to average earnings in 2002, and Gini coefficients by date of death

Date of death	No of doctors	Mean $Wealth_{2002}$ (SD)	Gini coefficient (SE)
1830-79	225	8.05m (£13.7m)	0.633 (0.038)
1880-99	168	10.1m (£19.6m)	0.683 (0.047)
1900-19	112	10.0m (£13.7m)	0.600 (0.051)
1920-39	104	4.97m (£7.63m)	0.607 (0.054)
1940-59	110	2.75m (£3.44m)	0.570 (0.049)
1960-79	129	871k (£1.10m)	0.561 (0.044)
1980-2001	132	597k (£658k)	0.521 (0.041)

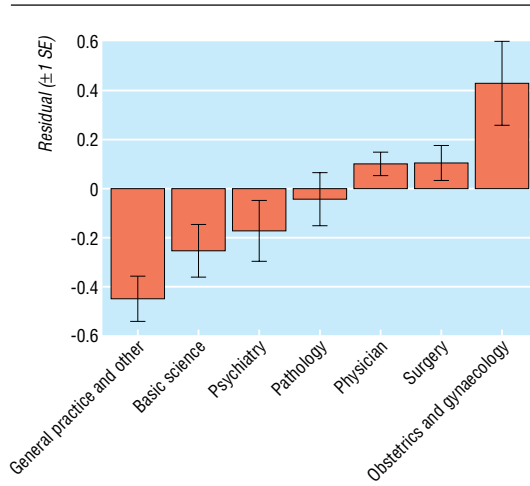


Fig 2 Wealth at death (standardised residual on a log scale after regressing on linear and quadratic effects of year of death, and age at death) of different specialty groups in the distinguished doctors

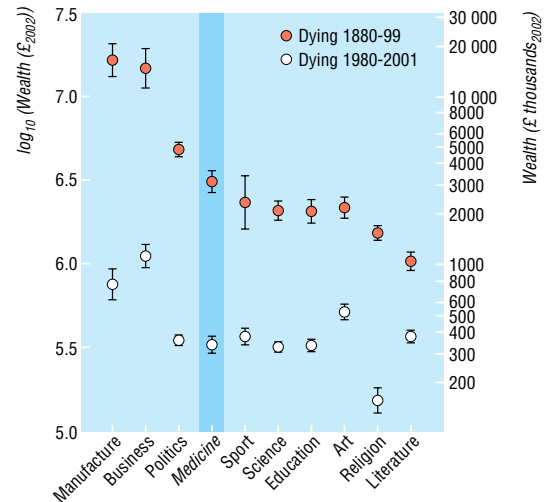


Fig 3 Wealth at death of distinguished individuals in 10 different occupational groups, as categorised by the *Oxford Dictionary of National Biography*. Error bars indicate one standard error

crime” or “individuals”). To compare medicine with other professions, I looked at nine other groups (fig 3). Notably, the wealth of individuals in some categories, particularly politics and business, may reflect inherited wealth. Figure 3 shows the geometric mean $Wealth_{2002}$ for individuals dying at the end of the 19th century (1880-99) and at the end of the 20th century (1980-2001). As well as highly significant effects of group and time period (both $P < 0.001$), analysis of variance also showed a significant interaction between group and time period ($F(9,4115) = 10.788$, $P < 0.001$), showing that the relative ordering of groups had changed. The interaction remained significant when the three highest and the two lowest earning groups in 1880 had been removed from the analysis ($F(4,1742) = 3.304$, $P = 0.010$). Distinguished doctors showed the largest relative decline: their wealth in absolute terms at the end of the 20th century was 10.5% of that at the end of the 19th century, compared with 13.44%, 12.38%, 13.04%, and 21.78% in the other four middle groups of distinguished individuals.

Distinguished doctors versus doctors in general

The wealth of distinguished doctors declined during the 20th century. An important question concerns the relative decline in the wealth of all doctors over that same period, and the extent to which distinguished doctors’ wealth declined disproportionately. Figure 4 summarises data from several sources. The open points show the earnings of medical practitioners for the period 1913 to 1959 (based on Routh¹⁶), at the 25th, 50th, 75th and 90th centiles. I added an estimate of a typical, presumably median, estimate of general practitioner salary for 2002 (www.pssru.ac.uk/pdf/uc2004/uc2004_s09.pdf). The solid points show the wealth of distinguished doctors from the *Oxford Dictionary of National Biography*, divided into hospital doctors (physicians, surgeons, obstetricians, and psychiatrists) and others (all other categories, including general practitioners, pathologists, and basic scientists). The median age at death of the distinguished doctors was 75, and to make comparison easier with the (living) doctors from the other surveys, they are plotted at the age of 45, midway through their working life (so that

those dying between 1960 and 1979 are plotted at 1925, etc). Importantly, I plotted total wealth for doctors from the *Oxford Dictionary of National Biography* and annual income for other doctors. The wealth of doctors from the dictionary is seen to decline in parallel with the income of all doctors.

Selection bias

Selection bias is a risk in this study because the criteria for inclusion in the *Oxford Dictionary of National Biography* have changed over the years, and because doctors included as distinguished in the 19th century are different from those included in the 20th century, with doctors perhaps being chosen as distinguished in the earlier period precisely because of their wealth or their social distinction, rather than because of their professional or scholarly achievement. I have dealt with this in two ways. Firstly, in the supplementary information on bmj.com, I analysed the wealthiest of the cohort of distinguished doctors dying between 1890

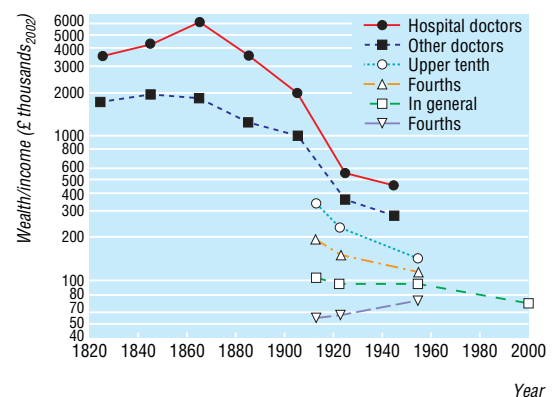


Fig 4 Wealth of medical practitioners in general (median (open squares), fourths (open triangles), and upper tenth (open circles)) for 1913-4, 1922-3, and 1955-6, and median wealth of distinguished doctors in the *Oxford Dictionary of National Biography* (hospital doctors (solid circles); other doctors (solid squares)). Distinguished doctors are plotted at approximate mid-point of working life

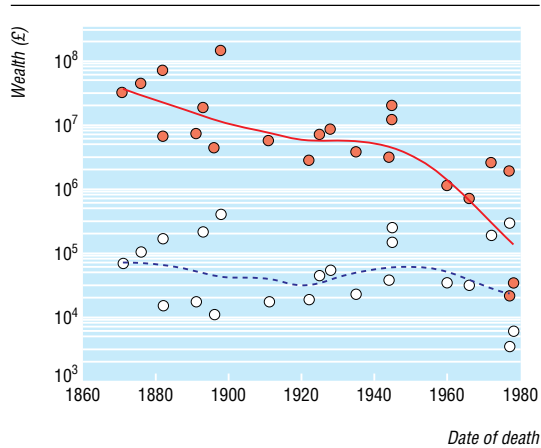


Fig 5 Wealth of the presidents of the Royal College of Physicians of London plotted against date of death. Red circles and red line indicate wealth relative to average earnings in 2002 (W_{2002}), and white circles and blue line indicate absolute wealth at time of death. Fitted lines are loess curves

and 1899 (the decade of Paget's death). In almost all cases, the doctors included as distinguished had made clear professional or intellectual contributions to medicine, which would have been recognised as distinction nowadays. A second way of dealing with the issue is by looking at a single group of doctors who are included in the dictionary and also meet an identical criterion of professional distinction—that of being president of the Royal College of Physicians of London. The dictionary contains biographies of all but one of the 23 doctors who were elected to this post between 1857 and 1966 (the exception is Sir Frederick Taylor (1847-1920), the author of a bestselling textbook of medicine¹⁷). Figure 5 shows that not only does W_{2002} of presidents of the Royal College of Physicians of London decline significantly (Spearman's correlation coefficient for W_{2002} and date of death $\rho = -0.753$, $P < 0.001$), but even in absolute terms there is no evidence that wealth has risen (Spearman's $\rho = -0.067$, $P = 0.768$). The pattern in presidents of the Royal College of Physicians of London is therefore the same as in distinguished doctors in general.

Discussion

The apparent wealth of distinguished doctors has undoubtedly declined continuously since the 19th century (although the study data cannot entirely dismiss the possibility that criteria for distinction have changed). It is also possible that very wealthy people have found increasingly "tax efficient" ways of disposing of their wealth as estate duties have increased (although if so, then tycoons such as Paul Hamlyn, worth £366 402 436 at his death in 2001, were less than efficient).

Limitations of the study

Representativeness

The distinguished doctors analysed in this study are, of necessity, not generally representative of doctors in the UK. They are, however, a sample of much interest in that they include many of the leaders of the profession who achieved major distinction (or, in a few cases,

notoriety), which means they have been included in the *Oxford Dictionary of National Biography*.

Differences between doctors and distinguished doctors

Whether the wealth of doctors in general has declined in parallel to the wealth of these distinguished doctors is difficult to ascertain, but the data of figure 4 show that the wealth of distinguished doctors has declined broadly in parallel with that of doctors in general, although perhaps slightly more quickly. In the 19th century, professional distinction and wealth were closely correlated, whereas in the 20th century those components have to some extent become separated, not least with the advent of academic medicine, making it possible that the richest of contemporary doctors now confine themselves to private practise, and hence do not meet the Oxford biographical dictionary's criteria for distinction. If so, other methods of data collection would be necessary to assess that wealth. Nevertheless, it remains true that the acquisition of a large personal fortune was not the major reward of distinguished doctors at the end of the 20th century, unlike the situation a century earlier.

Changing distribution of wealth in society

It is not only distinguished doctors who have become less wealthy. In all of the 10 groups of distinguished individuals who were looked at specifically, the mean wealth declined substantially over the past century, and that is to a large extent a reflection of a growing equalisation of incomes and hence wealth in society. For individuals who died between 1880 and 1899, the 90th centile was 182 times wealthier than the 10th centile, compared with only 29.7 times wealthier for those dying between 1980 and 2001. By the end of the 20th century, relatively fewer distinguished individuals showed vast wealth or abject poverty. By the end of the 20th century, the wealth of distinguished doctors had slipped relative to other groups, and particularly in relation to those in sport, the arts, and literature, and instead of their mean wealth being 4th out of 10 as they were a century earlier, they had become 9th out of 10, with the only group below them being those in religion, a group for whom Adam Smith hoped that, "The respect paid to the profession . . . makes some compensation . . . for the meanness of their pecuniary recompense."¹¹

Conclusions

Distinguished doctors in the 19th century were very wealthy, whereas by the end of the 20th century they were proportionately less wealthy. Assessing the correct level of remuneration for doctors is a difficult task, not least because as well as financial reward, doctors are also compensated in part by high levels of status and trust (although both may currently be in decline¹⁸). Adam Smith was clear that the reward of doctors must be at an adequately high level, for: "We trust our health to the physician . . . Such confidence could not safely be reposed in people of a very mean or low condition. Their reward must be such, therefore, as may give them that rank in the society which so important a trust requires."¹¹

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