

Hospital accounting and the insoluble problem of health expenditure

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Abstract

Amid discourses on ageing populations and increasingly costly medical technologies, the *problem of health expenditure* is perceived as one of the most significant socio-economic challenges facing Britain and other developed societies. The “need” for ever more elaborate hospital accounting systems is often expressed with reference to this problem.

This paper aims to further our understanding of the problem of health expenditure, and of its relationship with hospital accounting, by examining the conditions under which it emerged. Drawing on textual data from government reports and professional journals, the paper argues that the nationalisation of the British health services, the compilation of national health accounts and changing conceptions of the nature of disease transformed perceptions of health expenditure in the mid-20th century – from a “profitable” investment in the productive capacities of the nation to an “insoluble” socio-economic problem threatening to bankrupt the country. The paper furthermore links this transformation to the introduction of the first national hospital costing system in 1957.

Building on these suggestions, this paper proposes that present day concerns regarding health expenditure are not an inevitable consequence of demographic and technological change but contingent upon conceptions of the nature of disease as well as healthcare funding and accounting arrangements which emerged in the 1940s and 1950s.

1. Introduction

The cost of healthcare is widely perceived as one of the principal socio-economic problems facing developed countries. In 2009, Britain spent £136.4bn or 9.8% of its GDP on health services (ONS, 2011). By comparison, France spent 11.9% of GDP on healthcare in the same year, Germany 11.7%, Japan 9.5% and the United States as much as 17.6% (WHO, 2012). Concerns for the current costs of healthcare, whilst significant, are however overshadowed by concerns regarding the future costs of health services. A number of factors fuel these concerns. Firstly, medical science is continually developing new and increasingly expensive drugs and treatments. At present, it can cost more than £20,000 a year to treat a patient with recently developed cancer drugs such as Avastin, and it is widely expected that a number of the next generation of pharmaceuticals will exceed this figure by a considerable margin. Secondly, due to relatively low birth and death rates in many developed countries, the average age of their populations has increased over the last decades and is widely

expected to continue doing so for the foreseeable future. As the incidence of disease is thought to increase with age, these “ageing populations” are widely believed to require more health services, and expenditure, in the future. Finally, concerns regarding the cost of healthcare are compounded by what is thought to be the self-perpetuating nature of health expenditure. More effective and expensive health services allow people to live ever longer lives, but as they reach older ages they require ever more health services and incur ever more health expenditure. As early as the 1950s, it was suggested that this interaction between ageing populations, medical advances and health expenditure rendered the cost of healthcare an “insoluble” problem (Roberts, 1952).

The introduction of increasingly elaborate hospital accounting systems across the developed world is frequently linked to the problem of health expenditure. The OECD (2000), for example, suggested that “the challenges of rapid technological change, growing patient expectations and ageing populations” fuelled demand for its “System of Health Accounts” (p. 3) whilst Jones and Mellett (2007) argued that “spiralling resource costs, an ageing population and technological medical advances have led accounting to play a more visible and extrinsic role” in the health services (p. 92). Kurunmaki et al. (2006) and Lapsley (2001, 2007) similarly relate ageing populations and expensive medical technologies to hospital accounting reform.

This paper aims to further our understanding of the problem of health expenditure, and of its relationship to hospital accounting, by examining the conditions under which it emerged. Drawing on materials collected from government reports and professional journals, this paper suggests that prior to the creation of the British National Health Service in 1948 the cost of healthcare to the nation was not perceived as a problem, indeed, it was not known. Health expenditure was not accounted for in a systematic manner. There was however widespread concern regarding the cost of illness in terms of lost labour and productivity. Together with the rise of social medicine, which argued that disease was a sociological problem that could be “conquered” by means of social reform, this led to a widespread consensus that higher health expenditure would not only be economically beneficial but also “self-limiting”. Hospital accounting was largely concerned with stewardship in this context.

In the early years of the NHS, the cost of healthcare emerged as a major concern. The nationalisation of the health services and the compilation of national health accounts rendered health expenditure visible and placed it in direct competition with other types of government expenditure. Together with the (re-)emergence of biomedical models of disease and associated concerns regarding the expansion of medicine and ageing populations, these developments are argued to have constituted the cost of healthcare as an “insoluble” problem. As health expenditure emerged as a problem, hospital accounting reform came to be widely perceived as a matter of great urgency and a managerially oriented departmental costing system was introduced into the NHS in 1957.

Based on the materials presented, this paper argues that the problem of health expenditure is not an inescapable consequence of medical advances and ageing populations but contingent on health service funding and accounting arrangements as well as on conceptions of health and illness which emerged in the mid-20th century. The findings of the paper moreover suggest that accounting was both constitutive and reflective of the problem of health expenditure.

The remainder of the paper is structured as follows. Section 2 outlines the discourses on the cost of healthcare, conceptions of disease and hospital accounting in the years preceding the creation of the NHS in 1948. Section 3 examines how the nationalisation of the health services, the creation of national health accounts and the rise of biomedical conceptions of health and illness led to the emergence of the problem of health expenditure in the early

NHS. Section 4 examines the aftermath of the cost crisis in the early NHS and section 5 discusses the findings of this paper and offers a number of conclusions.

2. Health expenditure, social medicine and hospital accounting before the NHS

The cost of the health services before the NHS

In the first few decades of the 20th century, a plethora of organisations including voluntary, municipal, cottage, infectious disease and mental hospitals provided health services to the British population (Rivett, 1986). These organisations drew on a wide range of funding sources. A typical voluntary hospital, for example, would receive funding from various insurance and contributory schemes, local authority grants, subscriptions, legacies, donations, investments, charges and fees (e.g. MacKeown, 1942).

The cost of health services was a concern in the first few decades of the 20th century. It was a concern to hospital management committees, who had to ensure that they could fund the continuing operation of their hospitals. And it was a concern to many middle class families, for whom serious illness could spell financial hardship (the working classes were covered by national insurance from 1911 onwards). The cost of healthcare was however not perceived as a macroeconomic problem. Indeed, nobody knew what the cost of healthcare to the nation was in the mid-1930s.

The first attempt to measure the total costs of healthcare to the British economy was undertaken by an organisation called Political and Economic Planning (PEP, 1937). The PEP Report described the finances of the British health services as “obscure and little understood” (p. 409) and pointed to the “grossly excessive number of channels from which the finance of many health services is drawn” (p. 27). However, after three years of research and consultations with more than 200 individuals and organisations, the report produced an estimate of the “cost of treatment and maintenance of sick persons in Great Britain” which amounted to £185m a year or “about one twenty-fifth of national income” (PEP, 1937: 391).

The PEP Report expressed no concerns regarding the cost of healthcare. Instead, the report emphasised the “cost of ill-health” to the nation (PEP, 1937: 387). The report noted that the “total number of working weeks lost by persons claiming National Health Insurance sickness benefit was 29 million in England and Wales in 1933” and suggested that a “very moderate estimate” of the cost of illness in terms of value of work lost “cannot be less than £100 millions a year” (PEP, 1937: 387). The report moreover suggested that the “total burden of ill-health probably runs into at least £300 millions a year” and noted that “the sick or disabled wage-earner is a triple or quadruple economic burden”:

“In the first place he is usually causing loss of output and efficiency for the factory, office, shop or farm where he works. Next, he is causing loss of income to his own family and is often cutting into future income and consumption by incurring debts. Then, if he has to be removed to an institution he is incurring an extra maintenance cost which has to be borne by someone and finally he is giving rise to expenses such as medical attention and nursing, drugs, medicines and appliances.” (PEP, 1937: 409).

In light of this perceived burden of illness on the economy, the PEP Report called for increases in health expenditure as it suggested that “£1 of new expenditure at a strategic point, although apparently difficult to ‘afford’, may well save several pounds worth of existing expenditure” (p. 27).

During World War II and the years preceding the creation of the National Health Service in 1948 numerous other sources followed the PEP Report in pointing to the economic benefits of greater health expenditure. The Regius Professor of Physic at the University of Cambridge, for example, argued that higher health expenditure was “a nation’s best

economy” (Ryle, 1942: 747) and the Chief Medical Officer of the war-time coalition government suggested that investment in health “pays higher dividends, to the individual and the nation, than any other form of investment” (Jameson, 1943: 142). The Director General of the Army Medical Services, similarly suggested that investment in the health of recruits had turned them from “national liabilities” to “national assets” (Hood, 1945: 713) and the BMJ made repeated reference to the suggestion by Sir Arthur Newsholme that “health is worth whatever expenditure is efficiently incurred in its maintenance or to secure its return” (BMJ, 1944: 47; see also BMJ, 1943).

Whilst a range of commentators emphasised the perceived economic benefits of health expenditure prior to the nationalisation of the health services, the cost of health services inspired little debate in the late 1930s and early 1940s. As plans to introduce a socialised medical service took shape, a number of sources published cost estimates for such a service. The Beveridge Report (1942), for example, estimated the costs of the proposed “comprehensive health and rehabilitation services” at £170 million, the NHS White Paper (MoH, 1944) calculated a figure of £132 million and the Ministry of Health expected the service to cost £150m on the eve of its introduction (BMJ, 1948)¹. However, despite the desperate state of the public finances in war torn Britain and the prospect of making the nation’s medical services available to the entire population “free at the point of use”, few sources questioned the affordability of the proposed NHS. Those who did, like an editorial published by *The Lancet* (1947) under the title “Can we afford it?”, dismissed such concerns. Echoing the PEP Report (1937), the article emphasised the “enormous wastage of man-power due to illness” and argued that the “long-term economic benefits of medical care can be drawn only if the appropriate monetary investments are made” (*The Lancet*, 1947: 876).

The above paragraphs have outlined discourses on the cost of healthcare during the years preceding the creation of the National Health Service in 1948. They have shown that, during this period, the cost of illness in terms of lost labour and productivity was perceived as a significant economic problem, and documented the widely held belief that higher health expenditure represented a “profitable” investment in the productive capacities of the nation. The following sub-section further examines these issues by relating them to the social medicine movement, the notion of positive health and the emergence of new conceptions of health and disease in the first half of the 20th century.

Social medicine, positive health and the nature of health and illness

For most of the last two millennia Western notions of the nature of disease were dominated by the teachings of Hippocrates and Galen. These ancient Greek physicians believed that health was determined by the balance between the four humours of the human body (i.e. blood, phlegm, black bile and yellow bile). Disease was caused by imbalances in these humours, which affected the entire patient in a holistic manner (e.g. Bynum, 2008). Humouralist conceptions of disease persisted until the late 18th century, when the emergence of “hospital medicine” occurred in conjunction with a fundamental shift in notions of disease. The Parisian doctors who pioneered this new approach to clinical medicine rejected the idea that illness was caused by imbalances of the humours. Instead, they started to relate the signs and symptoms of disease to local pathological changes, lesions, which could be identified by post-mortem examinations. Hospital medicine, with its emphases on pathology and post mortems, developed a morbid fascination with death and disease. They became the “essence of medical inquiry” in the 19th century (Porter, 1999: 307). Health, on the other hand, came to

¹ These estimates differed to such a large degree because they are based on different assumptions on a range of factors including the geographical scope of the service (i.e. the entire UK or just England and Wales). For a detailed discussion of these estimates see Cutler (2003).

be defined in negative terms as Bichat, a leading Parisian doctor and pioneer of tissue pathology, called it “the sum of all the functions by which death is resisted” (cited in Porter, 1999: 307).

The emergence of new sciences like bacteriology and biochemistry, together with the invention of diagnostic technologies like x-rays, allowed clinicians to gain increasingly detailed knowledge of the precise pathological changes leading to various diseases. However, at the start of the 20th century, the greater understanding medicine had acquired of the biomedical mechanisms causing disease had not resulted in a vastly increased ability to treat or cure disease.

Whilst clinical medicine had done little to alleviate disease in Western societies, public health initiatives such as the building of sewers and regular garbage collections had led to a significant decline in mortality and morbidity in Britain and other European countries. Together with the rise of socialism and the great depression, this led to criticisms of the medical profession in the 1930s and 1940s, and in particular of the narrow biomedical focus of hospital based medicine. The British Medical Association (1938), for example, suggested that medicine had become so focussed on the “sciences of pathology and morbid anatomy” that the patient was frequently perceived as a mere “vehicle of disease processes” (p. 256). Fremantle (1942) similarly suggested that doctors’ view of disease had been “grossly and unscientifically limited by the walls of the hospital and consulting room” (p. 109) and a leading article in the BMJ (1943) complained that clinical medicine had “directed too much time to the details of technical diagnosis and specialised treatment; that they had been engaged too much on the study of how men die and too little on the study of how men live” (p. 648). A number of correspondents of the BMJ referred to the medical profession’s perceived obsession with death and disease as “the cult of negative health” (e.g. Maberly, 1943: 55).

Inspired by the work of continental European doctors like Alfred Grotjahn and René Sand, as well as by the health services of the recently founded Soviet Union, an alternative approach towards medicine called “social medicine” started to attract supporters in Britain from the 1930s onwards (e.g. PEP, 1937; SMA, 1933). Instead of concentrating on the “immediate [biomedical] causes of disease”, the proponents of social medicine called for a reorientation of medicine towards the “ultimate causes of disease” (Ryle, 1942: 109). These ultimate causes of disease could be found neither in the laboratory nor in the operating theatre, but in society in the shape of malnutrition, overcrowding, lack of hygiene and lack of education. In light of their emphasis on the “ultimate” sociological rather than the “immediate” biomedical causes of disease, the proponents of social medicine suggested that medicine was a social science (e.g. PEP, 1937).

Social medicine’s focus on the social aetiology of disease raised tantalising prospects. If illness was a function of overcrowding, malnutrition and poor education, it could be fought by providing better housing, food and education to the people. There was a strong sentiment among the supporters of social medicine that by attacking these “ultimate” causes of disease through social reform, and by addressing the high levels of existing illness in the population with the creation of a “comprehensive health and rehabilitation service”, disease could be “conquered” (Beveridge, 1942). The aim was “the replacement of widespread disease with universal health” (Adams, 1942: 139).

The focus of the health services would shift from attempting to treat and cure diseases towards prevention and the promotion of “positive health”. This term denoted “something more than the mere absence of sickness” (The Lancet, 1943: 51). It described a state of “abundant” or “exuberant health” (Adams, 1942: 138-139), people who were “sound and complete in every attribute” (Picton, 1944: 586).

Despite their socialist roots, the teachings of social medicine achieved widespread acceptance among Britain's medical elites in the decade preceding the creation of the NHS. The British Medical Association (1938, 1942), the BMJ (1942), The Lancet (1943), the Regius Professor of Medicine at Oxford (Buzzard, 1942), the Chief Medical Officer (Jameson, 1943) and the head of the Army Medical Services (Hood, 1945) were among those who had voiced their support for social medicine. Government policy also started to be increasingly influenced by the social medicine movement. The Beveridge Report (1942), for example, suggested that the aim of the health services it recommended was "the achievement of positive health".

The emergence of social medicine, and of the "sociomedical" model of disease (Porter, 2006) which underlay it, is argued to have had significant implications for the manner in which health expenditure was perceived prior to the creation of the NHS. By establishing a comprehensive health service free at the point of use and by addressing the sociological determinants of disease, social medicine aimed to combat existing disease and prevent future disease. Together, these two measures would have huge economic benefits. They would not only reduce the cost of illness, which was thought to exceed £100 million a year (PEP, 1937), but also create a healthier, more efficient and productive workforce.

Whilst these benefits would be permanent, the increases in health expenditure proposed by social medicine would only be temporary. For once the back-log of existing disease had been cleared, and the sociological causes of disease addressed, the incidence of disease in the population, and the associated need for health expenditure, would decrease markedly. Health expenditure was thought to be self-limiting. Sir Farquhar Buzzard, the Regius Professor of Medicine at the University of Oxford, envisioned a future in which an "increasingly healthy and capable race [...] much less dependent on the help of remedial medicine for its fitness and survival", a future in which "the pride of hospitals in the number of their in-patients and out-patients and in the length of their waiting lists gives place to a pride on the part of health services in the diminished and diminishing need for hospital accommodation" (Buzzard, 1942: 703). A correspondent of the British Medical Journal expressed the sentiment in more simple terms: "Positive health does not need doctoring: they that are whole need no physician" (Picton, 1944: 569).

Hospital accounting

During the 19th century, British hospital accounting was similarly fragmented as was the case with the health services more generally. Most hospitals operated their own, customised accounting systems (Jones and Mellett, 2007; Rivett, 1986). At the turn of the 20th century, a number of London-based voluntary hospitals started to adopt Burdett's (1893) "uniform system of accounts" at the behest of the King's Fund, a leading provider of charitable funding for hospitals. This system classified expenditure into around 60 categories of expenditure (e.g. salaries, drugs, repairs, cleaning and meat) and calculated an aggregate cost per in-patient day ratio for the entire hospital (cf. Robson, 2003, 2006).

Burdett's "uniform system" in turn came under criticism from Stone (1924), who argued that the increasing size and complexity of hospitals required more elaborate accounting arrangements (Robson, 2003). Stone (1924) proposed a system which would allow for the calculation of unit costs for the various departments of hospitals (e.g. cost per meal served for the kitchen department). Such a departmental costing system, Stone (1924) argued, would allow for administrative control to be exercised.

Whilst Stone's departmental approach won the support of a number of hospital accounting enthusiasts (e.g. Livcock, 1940), it attracted little attention beyond that and was not widely adopted by British hospitals. Hospital management committees preferred to address any

financial shortfalls by appealing for further funding rather than by effecting economies and many saw hospital accounting as a tool for fundraising rather than administrative control – few things were more effective in attracting charitable donations for hospitals than accounts showing a large deficit (Gorsky et al., 2002; Jones and Mellett, 2007; Rivett, 1986).

The publication of the NHS White Paper (MoH, 1944) and the passing of the NHS Act in 1946 did not result in a significant increase in interest in hospital accounting. Despite the prospect of a nationalised, publicly funded health service, calls for hospital accounting reform remained restricted to a small number of accountants and hospital administrators (e.g. *The Accountant*, 1946). Such calls did not resonate with a wider audience and less than a month before the NHS Act came into effect in July 1948, the government was yet to determine what hospital accounting systems the nationalised health service would adopt. In a world where health expenditure was perceived as economically beneficial and self-limiting, hospital accounting was not a priority.

3. Cost crisis, negative health and departmental costing

The cost crisis

On the 28th of June 1948 Parliament approved Statutory Instrument 1414 which laid out regulations on “Hospital accounts and financial provisions” for the National Health Service (MoH, 1948). The Statutory Instrument instructed all hospitals to submit estimates of expenditure and income for the forthcoming financial year to the Ministry of Health by the 15th of October as well as estimates for the current financial year by the 1st of December. The Statutory Instrument moreover prescribed that these estimates should be prepared according to the “subjective” approach. A leading article in *The Accountant* (1948) suggested that this approach did “not differ materially” from Burdett’s (1893) “uniform system of accounts” used by many London-based voluntary hospitals.

On the 5th of July 1948, only a few days after Statutory Instrument 1414 was enacted, the vast majority of British hospitals entered into public ownership and the National Health Service was created. Parliament had made £150m available in order to fund the cost of the NHS for the remainder of the 1948-1949 financial year (BMJ, 1948: 422)².

As the Ministry of Health received the current estimates for the 1948-49 financial year from the various hospital boards and management committees, it quickly became apparent that the NHS would require further funds in addition to the £150m allocated for that year. A supplementary estimate of £58m was brought before Parliament where it was vigorously debated but ultimately approved (BMJ, 1949a, 1949b). The health estimates also became subject to widespread debates and concerns beyond Westminster. *The Accountant* (1949) calculated that, including the supplementary estimate, the NHS had cost more than £208m during its first 9 months and called for the service to be “administered on the most competent lines” (p. 186). *The Hospital* (1949) suggested that the supplementary estimate had “focus[ed] a good deal of attention upon the cost of the health service” (p. 111) and the BMJ (1949c) noted with considerable concern that the “supplementary ophthalmic services, estimated to cost £2.5 million, are now expected to require £14 million, and [that] the estimate of £8 million for general dental services has swollen to the figure of £20.5 million” (BMJ; 1949c: 314).

² This figure refers to the net cost of the NHS to the Treasury, which was the figure most widely discussed in Parliament and professional journals in the late 1940s and early 1950s. Unless stated otherwise, the NHS cost figures in the subsequent paragraphs refer to the net cost of the service. The gross cost of the service was not frequently referred to during the debates regarding health expenditure and it was not customary to express the cost of healthcare as a percentage of GDP.

The NHS budget for 1949-50, initially set at just under £260m, once again proved insufficient for meeting the funding requirements of the health service. As it became evident that another supplementary estimate, this time of £99m, was required, concerns regarding the cost of the NHS escalated. The *Lancet* (1950) noted that “the supplementary estimate presented for the National Health Service is nearly £99 million, bringing the total cost [...] to £358 million” before asking “why the Chancellor [of the Exchequer] is allowing Mr. Bevan [the Minister of Health] to throw this colossal burden on the taxpayer” (p. 499). The *Accountant* (1950) calculated that the cost of the NHS in 1949-50 had increased by “139 per cent over the estimated initial annual cost of the first year” and suggested that it had reached “almost astronomic heights” (pp. 257-258). The *BMJ* (1950a) similarly noted that the cost of the NHS for 1949-50 had been revised up to £358m and emphasised that the “original estimate for pharmaceutical, dental and ophthalmic services for 1948-9 was £30.8m; the revised estimate for 1949-50 was £109m” (p. 656). The article concluded that “the finances of the NHS have got completely out of hand” (*ibid*). Later in the same year, a leading article in the *BMJ* (1950b) suggested that NHS was “heading for the bankruptcy court” and quoted the Chancellor of the Exchequer saying “not a penny more” after imposing a spending ceiling of £400m on the health service (p. 1262).

After 2 years of large supplementary estimates, the NHS did not exceed its £393m budget in the 1950-51 financial year and, with the introduction of charges for dentures and spectacles from 1951, the net cost of the NHS remained under the £400m spending ceiling imposed by the treasury for the next two financial years. Concerns regarding the cost of the NHS however persisted as the gross cost of the service continued to increase and in 1953 the government appointed a Committee of Enquiry into the Cost of the National Health Service. Chaired by Claude Guillebaud, a Professor of Economics at the University of Cambridge, the committee was to “review the present and prospective cost of the National Health Service”. The committee reported in 1956 and its findings are discussed in section 4 below.

The rapid increases in health expenditure outlined in the above paragraphs, perhaps understandably, caused considerable concern in Britain in the late 1940s and early 1950s. Spending more than £400m on health services may have appeared excessive to many in a society which was still recovering from WWII and in which many of the basic necessities of life were rationed. However, the cost of the health service and the rapid increases in health expenditure are argued to be just one of several factors which led to the emergence of the problem of health expenditure in the early years of the NHS. Indeed, Eckstein’s (1958) study of the early National Health Service remarked that health expenditure had risen more sharply in other European and North American countries during the 1940s and 1950s without causing similar concerns regarding the cost of healthcare.

It is argued that the nationalisation of the health services, and the associated creation of national health accounts, also played an important role in the emergence of the problem of health expenditure. With the creation of the National Health Service multiple, “obscure and little understood” (PEP, 1937) channels of healthcare funding were almost completely replaced by one single source, the state. Health expenditure became a matter of public record, of public debate, and came into direct competition with other public expenditure like education or welfare. Additional healthcare funding could no longer be procured by approaching a wealthy benefactor at, for example, a charity dinner but had to be debated and approved by Parliament. The accounting and budgeting systems of the newly created National Health Service are argued to have played a central role in this context. As the above paragraphs have shown, the debate on health expenditure in the early years of the NHS was both triggered and framed by the health service estimates compiled by the Ministry of Health. Concerns for the cost of healthcare first emerged in response to the supplementary estimates to the 1948-49 NHS budget, and intensified with the publication of subsequent estimates. The

creation of these national health accounts, it is argued, gave visibility to the hitherto impenetrable, unknown and invisible cost of healthcare to the nation.

Whilst the perceived increases in healthcare costs, alongside the nationalisation of the health services and the systematic measurement of health expenditure, had constituted the cost of healthcare as a problem, it was not yet an “insoluble” problem. Indeed, proponents of social medicine suggested that the overspends supported rather than contradicted their theories on health expenditure. It was suggested that the higher than expected costs of the NHS were caused by greater than expected “back-log” of untreated disease and therefore represented the ultimate proof for the necessity of increased health expenditure. In the words of a Labour Member of Parliament, the overspends “indicated the extent of the need for the [National Health] Service” (Messer, 1949: 373).

What turned the problem of health expenditure into an insoluble problem was the rejection of sociomedical and the re-emergence of biomedical notions of health and illness, as the following sub-section will propose.

The expansion of medicine, ageing populations and negative health

Amid emerging concerns regarding the cost of healthcare, the teachings of social medicine came under attack in the late 1940s and early 1950s. The concept of positive health, the socio-medical model of disease and the notion of economically beneficial, self-limiting health expenditure, all started to be questioned. Leading the charge was Dr Ffrangcon Roberts, a radiologist at Cambridge University’s Addenbrooke’s Hospital, who discussed the role of “medicine in a planned economy” in 1948. Whilst Roberts (1948) appeared to accept social medicine’s contention that social reform may lead to a reduction in disease, he disputed that this would reduce future health expenditure. For, he argued, “whatever reasons exist for hoping that a rise in standards of living will diminish the incidence of disease, there is every reason to fear that it will increase the incidence of treatment” (Roberts, 1948: 486). In support of this suggestion, Roberts (1948) pointed to what he called the “expansion of medicine” (p. 485). He suggested that, over the last 20 years, “many new hospitals have been built” and that a “large force of auxiliaries” had been added to an “increasing army of nurses” (Roberts, 1948: 485). Roberts moreover suggested that the expansion of medicine was accelerating. Drawing on his experiences at Addenbrooke’s, he showed that since 1927 the number of pathological examinations at the hospital had increased 33 times, and that of blood count tests 50 times (Roberts, 1948: 485-486).

Roughly at the same time as Roberts (1948) voiced his concerns regarding the expansion of medicine, changes in the demographic structure of Britain started to be more widely debated in the medical journals. A number of articles discussed how Britain’s health and social services would adapt to an “ageing population” (e.g. Thomson, 1949). A further set of articles discussed the economic implications of an ageing population, with some suggesting that potentially longer working lives “would have a valuable contribution to make towards the nation’s wealth” (BMJ, 1947: 643), whilst others feared that Britain’s population would “come to include an increasingly larger proportion of the unproductive old” (Crew, 1946: 599).

As concerns for the cost of the National Health Service first emerged in the wake of the supplementary estimates to the 1948-49 budget and then escalated in the early 1950s, Ffrangcon Roberts combined his earlier thoughts on the “expansion of medicine” (Roberts, 1948) with the emerging concerns regarding ageing populations to articulate a new perspective on health expenditure, which he first published in an article in the BMJ (Roberts, 1949) and elaborated upon in a book entitled “The cost of health” (Roberts, 1952).

Roberts (1949, 1952) started both of his contributions by criticising Lord Beveridge's (1942) estimate of the cost of a nationalised health service and subsequently proposed reasons why the actual costs of the NHS had exceeded these estimates. In this context, Roberts (1949) suggested that the Beveridge Report had ignored the "effect of the ageing of the population" on health expenditure (p. 293). Based on the population projections of the Beveridge Report, Roberts (1949) noted that Britain's population of "working age" will fall by 2.6 million by 1971, whilst that of "pensionable age" will increase by four million. He suggested that, according to Lord Beveridge, the latter group would be enjoying a "healthy old age which eventually terminates in clinically blameless death" (Roberts, 1949: 294). Roberts (1949) himself, on the other hand, argued that the "need for medical attention increases with age" (p. 293) as the "incidence of degenerative disease", the need for "domiciliary attendance" and for "beds for the chronic sick" were all considerably more pronounced among the old (p. 294).

Roberts (1949, 1952) suggested that a second factor that Lord Beveridge had not considered in his cost estimates was the "intrinsically expansile nature of hospital practice" (Roberts, 1949: 293). Building on his earlier suggestion regarding the "expansion of medicine" (Roberts, 1948), he suggested that as science comes to play an increasingly central role in medicine, medicine adopts one of the "chief characteristics of science", namely that "it expands indefinitely and never reaches finality" (Roberts, 1952: 55). Medicine, he argued, "becomes obedient to the law of perpetual expansion" (ibid).

Having discussed the effects of ageing populations and the expansion of medicine on health expenditure, Roberts (1952) suggested that the interplay between those two factors had further implications for the cost of health services. More specifically, he suggested that medical science had resulted in "great triumphs" over acute diseases suffered by the young but could only treat, not cure, the chronic and degenerative diseases suffered predominantly by the old. Roberts (1952) argued that "those who are really saved by medical science are chiefly the young" and that "the young thus saved survive to join the old and therefore to suffer diseases that cannot be cured" (p. 90). The expansion of increasingly expensive health services, Roberts (1952) suggested, was responsible for greater longevity, a "medicated survival" (p. 142) into old age which, in turn, resulted in higher demand for health services. "In short", Roberts (1952) suggested, "the further medicine advances, the greater the amount of work which it makes for itself" (p. 93). In light of his suggestions regarding the expansion of medicine, ageing populations and the self-perpetuating nature of medicine, Roberts (1952) argued that the problem of health expenditure is "by its very nature, insoluble" (p. 193).

At the heart of Beveridge's (1942) misjudgement of the cost of healthcare, according to Roberts (1949, 1952), were however "misconceptions" about the nature of health and illness (Roberts, 1949: 294, 1952: 24). With regard to social medicine and its claims that disease was a sociological problem which could be "conquered", Roberts (1952) suggested that "certain schools of thought [...] have allowed their conception of health to be influenced by the emotion and sentiment [...], by wishful thinking and idealistic dreaming, by sociological considerations and political prejudice" (p. 24). The notion of "positive health" is described as a "fiction" (Roberts, 1952: 27).

Having denounces sociological conceptions of health and illness, Roberts (1952) offered his own reflections on the issue. These displayed a strong focus on the biomedical mechanics of the body, and a fascination with death and disease characteristic of what the proponents of social medicine had labelled "negative health" a decade earlier. Roberts (1952) defined health "as the individual's capacity, innate or acquired, to resist disease or death" (p. 219) and suggested that "the fight against disease is one aspect of the struggle for existence", a struggle that "must inevitably become harder at every step owing to our inherent moral and physical infirmities, our mortal nature, and the bounds of time and space" (Roberts, 1949: 295). Under

the biomedical model of health and illness propagated by Roberts (1949, 1952), disease, and consequently health expenditure, was inevitable.

Roberts (1948, 1949, 1952) reflections on health expenditure attracted considerable attention in the late 1940s and early 1950s. Whilst they were criticised by a number of commentators, many others started to articulate their concerns regarding the cost of health services in the terms set out by Roberts. His contributions received sympathetic reviews by *The Lancet* (1952) and the *BMJ* (1949, 1952) and his arguments were rehearsed by numerous contributors to the health expenditure debates in the early NHS. Abel-Smith (1956), one of the principal contributors to the Guillebaud Report, described Roberts (1952) book as “widely read and widely quoted” (p. 198).

Departmental costing for the NHS

Section 2 has shown that prior to the creation of the National Health Service interest in the introduction of managerial accounting practices into hospitals was limited to a small number of hospital accountants and administrators. It was argued that amid discourses regarding the conquest of disease and the self-limiting properties of health expenditure, the operational efficiency of hospital services was not a priority.

At the time of the “appointed day” which marked the creation of the NHS on the 5th of July 1948, hospital accounting remained a marginal issue. As noted above, Parliament only set out regulations on “Hospital accounts and financial provisions” a week before the appointed day, an event which provoked little interest with the exception of one editorial in *The Accountant* (1948).

This was to change radically in 1949, when the first of several large supplementary estimates for the NHS was approved in Parliament and Roberts (1949) first voiced his theories regarding the relationship between healthcare costs, medical science and ageing populations. As health expenditure emerged as a matter of considerable concern, hospital costing promised to supply a means of containing increases in the cost of healthcare. The introduction of a departmental hospital costing system came to be seen as an urgent necessity, not only by *The Accountant* (1949, 1950, 1952) and *The Hospital* (1952), but also by the medical journals which had hitherto barely taken notice of hospital accounting. *The Lancet* repeatedly suggested that a departmental costing system may represent a step towards “effective control over hospital expenditure” (*The Lancet*, 1951a: 397, see also *The Lancet*, 1950) and pointed to the “urgency and the fundamental importance of a proper system of departmental analysis of expenditure” (*The Lancet*, 1951b). The *BMJ* (1952) similarly called for hospital accounting reform, suggesting that it was “essential [...] that the present inadequate accounting arrangements in the hospital should be brought up to date” (p. 1247). The medical journals moreover published a range of articles discussing departmental costing systems, often in considerable technical detail (e.g. Livcock, 1950; Stone, 1949a, 1949b).

Against this background, the government also started to take a strong interest in health service accounting and, in 1950, the Minister of Health commissioned no fewer than three reports into hospital costing (King’s Fund, 1952; Nuttfield Trust, 1952; RBHT, 1952). All three of these reports recommended the introduction of a departmental costing system in the NHS. Leading articles in the *BMJ* (1952), *The Lancet* (1952) and *The Accountant* (1952) welcomed the findings of the reports and equally endorsed the introduction of departmental costing. A final report, compiled by the Ministry of Health (1955), set out the details of the scheme to be adopted, and a departmental hospital costing system was introduced into the NHS in April 1957.

4. The Guillebaud Report and beyond

In 1956, the Report of the Committee of Enquiry into the Cost of the National Health Service (Guillebaud, 1956) as well as the research on which it was based (Abel-Smith and Titmuss, 1956) were published. The report showed that the net cost of the National Health Service to the Treasury had increased from £327.8m in 1948-49 to £430.3m in 1953-54. Adjusted for inflation, the net cost of the NHS had however only increased from £327.8m to £380.8m (in 1948-49 prices) and, as a percentage of national income, the cost of the health service had actually declined from 3.51% to 3.24% during this timeframe. Based on these figures, the report suggested that “the widespread popular belief that there has been an increase of vast proportions on both the money cost and the real cost of the National Health Service is not borne out” (Guillebaud, 1956: 11).

In addition to the total cost of the health service, the report had also investigated the costs of its various constituent parts such as the dental and supplementary ophthalmic services, where large overspends had caused particular concerns in the late 1940s and early 1950s. With regard to the dental service, the report showed that the initially high costs of these services had declined from 1949-50 onwards, and argued that this decline “had already started before the charges [for these services] were introduced” in 1951 (Guillebaud, 1956: 25). The report explained this pattern of expenditure in the following terms:

At the beginning of the Service, it looks as though the high costs were attributable to an accumulation of demand from persons with unsatisfactory dentures and persons requiring dentures. After this back-log of demand had been largely dealt with, a decline set in as a rising proportion of needs were met. (Guillebaud, 1956: 25)

With regard to the supplementary ophthalmic services, the report observed a similar pattern of expenditure as it remarked that the cost of these services “was falling before charges were introduced in 1951-52” (Guillebaud, 1956: 25).

In addition to its past and present costs, the committee had been instructed to consider the prospective costs of the NHS in response to the concerns regarding the implications of ageing populations and medical advances raised by Roberts (1949, 1952). With regard to the “effect of population changes” on health expenditure (Guillebaud, 1956: 38), the committee adopted the population projections of the Government Actuary Department to calculate that changes in the age structure would increase the cost of the NHS by no more than 3.5% by 1971-72. Based on these figures, the report concluded that “there is no justification for the alarm that has been expressed about the impact of ‘an ageing population’ on the cost of the National Health Service” (Guillebaud, 1956: 40). The committee however supported Roberts (1949, 1952) conclusions regarding the expansion of medicine, arguing that the “growth of medicine adds continually to the number and expense of treatments” (Guillebaud, 1956: 50). It added that there was no evidence that the “speeding of therapy and the improvement of health” enabled by medical advances would offset its costs and concluded that the notion of health expenditure as “self-limiting” was an “illusion” (Guillebaud, 1956: 50).

Summarising its findings, the Guillebaud Report suggested that the “rising cost of the Service in real terms during the years 1948-54 was kept within narrow bounds” and rejected the notion that there had been “widespread extravagance” in the NHS (Guillebaud, 1956: 269). The report could not identify any measures which would “reduce in a substantial degree the annual cost of the Service” but made some recommendations, such as calling for greater capital investment in hospitals, which would “tend to increase the future cost” of the NHS (Guillebaud, 1956: 268).

The publication of the Guillebaud Report marked the end of the cost crisis. It had shown that much of the cost increases in the early NHS had been caused by inflation and by a back-log of previously unmet demand in dentures and spectacles. Concerns regarding the effects of

medical science and ageing populations on health expenditure had been allayed, if not entirely banished. The NHS became part of the post-war political consensus and for a number of years after the publication of the Guillebaud Report both the Conservative and Labour Party promised to increase health expenditure. Interest in hospital accounting once again became limited to a small number of enthusiasts and the departmental costing system, launched in 1957, played only a marginal role in the NHS.

Social medicine and the socio-medical model of health and illness entered into a period of rapid and terminal decline in the 1950s (Porter, 2006). The biomedical model, perhaps more attuned to the focus on individualism and enterprise in Western societies, to the belief in “hard” science and technology and to the interests of the medical profession, would reign supreme in the second half of the 20th century. Huge amounts of public and private money were invested in hospital building and biomedical research programmes across the developed world. The hospital became the focus of healthcare, specialties multiplied and medical practice became increasingly technological, technical and narrow. Normal biological processes like childhood, pregnancy, ageing or dying became increasingly “medicalised”. Preventive medicine, meanwhile, was starved of both funds and prestige.

In parallel to these developments, the second half of the 20th century saw an increase in state involvement in funding and delivering health services. Some followed the British example of nationalising or socialising the vast majority of healthcare providers (e.g. the Nordic countries), whilst others opted for more or less comprehensive social insurance schemes (e.g. Australia, Germany and the United States). As in the British case described above, greater state involvement in the health services was frequently accompanied by efforts to measure the cost of healthcare. In the United States for example, the introduction of the publicly funded Medicare and Medicaid programmes in the mid-1960s coincided with the creation of National Health Accounts. From the 1970s onwards, international organisations like the OECD and the WHO also started to compile national health accounts.

Perhaps unsurprisingly given the vast amounts of money spent on hospital construction, biomedical research and medical education from the 1950s onwards, the health accounts compiled by both national governments and international organisations showed large increases across the developed world. Against this background, and no doubt amplified by the slowdown in economic growth from the 1970s onwards as well as the rise of neo-liberalism, concerns regarding the cost of healthcare, the expansion of medicine and ageing populations soon re-emerged, as did calls for the introduction of managerial hospital accounting practices.

5. Discussion and conclusions

This paper has examined the conditions under which the problem of health expenditure emerged. It has argued that present day concerns regarding the cost of healthcare are not an inescapable consequence of ageing populations and increasingly expensive medical technologies but historically contingent, and suggested that three developments interacted to constitute health expenditure as an insoluble problem in the mid-20th century.

The first such development was the creation of the National Health Service in 1948, which replaced the myriad and often obscure funding channels of the British health services with a single source, the state. Health expenditure became subject to parliamentary scrutiny and came into direct competition with other types of social and welfare expenditure.

The second development was the creation of national health accounts, which gave visibility to the hitherto unknown cost of healthcare to the nation. The paper has suggested that the compilation of such health service accounts both triggered and framed concerns regarding the cost of healthcare in the early NHS. These concerns, it was argued, in turn

acted as a catalyst for the introduction of managerial hospital accounting practices into the NHS, suggesting that accounting was both constitutive and reflective of the problem of health expenditure (cf. Burchell et al., 1985; Hopwood, 1987).

The third historical development which contributed to the emergence of the problem of health expenditure as identified by this paper was a fundamental shift in conceptions of health and disease. In the 1930s and 1940s, health policy discourses were dominated by the socio-medical model of health, which saw disease as a sociological problem that could be “eradicated” by means of social reform. In the early 1950s, these ideas gave way to biomedical notions of health, which saw disease as inevitable and which informed emerging concerns regarding ageing populations and the expansile nature of medical science and technology. It was argued that the dominance of the biomedical model of health and disease during the second half of the 20th century was closely related to increasing concerns regarding health expenditure as well as to actual increases in health expenditure across the developed world.

The findings of this paper complement a set of studies which have challenged the assumptions on which the problem of health expenditure is predicated. The assumption that an ageing population leads to significant increases in health expenditure has in particular come under criticism in recent years. A number of studies have suggested that a large proportion of healthcare spending on the aged is incurred within the final year of their lives, indicating that proximity to death rather than age per se is an important driver of health expenditure (e.g. Zweifel et al., 1999). A range of reports compiled by bodies such as the European Commission (2006), the Australian Department of Health and Aged Care (1999) and the New Zealand Treasury (2005) have similarly rejected the notion that an ageing population has significant implications on health expenditure. The role of ever more elaborate and expensive medical technologies has also come under criticism in recent years, as question marks regarding their clinical effectiveness and concerns regarding overtreatment emerged (e.g. Lenzer, 2012).

Nevertheless, the notion that demographic and technological change inevitably leads to higher health expenditure remains ubiquitous. In the UK, Labour and Conservative governments have justified a succession of market based health service reforms with reference to ageing populations and the expansion of medicine. For example, with regard to the present reorganisation of the NHS, the Department of Health (2011) suggested that reform was necessary because “our population is changing” (p. 2) and “the cost of treatment is rising” (p. 5). The Prime Minister justified the reforms in similar terms, suggesting that the NHS can “not stand still given the challenges of an ageing population and the rising cost of health treatments” (Cameron, 2012).

However, the relationship between the healthcare industry and the problem of health expenditure also merits closer examination. Whilst concerns regarding ageing populations and the costly medical technologies have led to more scrutiny of the operational efficiency of health services in the shape of, for example, hospital accounting, it has also removed the question as to whether health expenditure should increase from public debate. Health services, and expenditure, are universally expected to grow, an expectation that the medical profession and the pharmaceutical industry are only too ready to fulfil, even if that means providing increasingly elaborate health services with increasingly uncertain benefits.

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