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“Comparing the incomparable”: Hospital costing and the art of medicine in post-war Britain



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ABSTRACT

This paper examines the relationship between medical and hospital accounting discourses during the two decades after the 1946 National Health Service (NHS) Act for England and Wales. It argues that the departmental costing system introduced into the NHS in 1957 was concerned with the administrative aspects of hospital costliness as contemporary hospital accountants suggested that the perceived incomparability, immeasurability and uncontrollability of medical practice precluded the application of cost accounting to the clinical functions of hospitals. The paper links these suggestions to medical discourses which portrayed the practice of medicine as an intuitive and experience-based art and argues that post-war conceptions of clinical medicine represented this domain in a manner that was neither susceptible to the calculations of cost accountants nor to calculating and normalising intervention more generally. The paper concludes by suggesting that a closer engagement with medical discourses may enhance our understanding of historical as well as present day attempts to make medicine calculable.

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1. Introduction

Against the background of New Public Management¹ reforms (Hood, 1991), the role of accounting in the public sector has changed dramatically since the early 1980s (e.g. Broadbent & Guthrie, 1992, 2008; Goddard, 2010; Hopwood & Tomkins, 1984; McSweeney, 1994). Accounting no longer “merely record[s] the activities of the state”, it has come to define, shape and constitute the objectives and activities of many public sector organisations (Hopwood, 1984: 171). The increasing prominence of accounting in the public sector had important implications for engineering, teaching and other professions that had traditionally played a central role in defining and delivering public services (cf. Abbott, 1988). More specifically, a range of studies have suggested that accounting came to “displace” these professions as the dominant discourses in public sector organisations like railways, utilities and schools (e.g. Dent, 1991; Mueller & Carter, 2007; Oakes, Townley, & Cooper, 1998; Ogden, 1995).

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¹ The term New Public Management (NPM) was coined by Hood (1991) and refers to a “set of broadly similar administrative doctrines which [have] dominated the bureaucratic reform agenda” over the last four decades (p. 3). These doctrines include greater emphases on professional management, performance measures, output controls, competition and private-sector management practices as well as a disaggregation of units in the public sector (Hood, 1991: 4–5).

Amid significant increases in health expenditure, hospitals have also been an important focus of NPM reform over the last three decades (e.g. Bourn & Ezzamel, 1986a, 1986b; Chua & Preston, 1994; Lapsley, 1991; Llewellyn & Northcott, 2005; Lowe, 2000; Preston, Cooper, & Coombs, 1992). However, medical discourses and professionals demonstrated greater resilience than other professions in the face of accounting reform. Rather than displacing medical discourses and professionals, accounting reforms often found themselves decoupled from the medical operations of hospitals (e.g. Jones & Dewing, 1997; Kurunmaki, Lapsley, & Melia, 2003; Rea, 1994). Despite this resilience, and despite the centrality of medical rationales and professionals in defining and running health services (e.g. Jacobs, Marcon, & Witt, 2004; Kurunmaki et al., 2003; Lapsley, 1994), the roles of medical discourses and practices in the context of hospital accounting reforms have not been fully examined by the extant accounting literature. The next two paragraphs in turn discuss the perceived shortcomings of historical and “contemporary” studies of hospital accounting in this respect.

A growing body of literature has examined the historical development of hospital accounting in its social and institutional context (e.g. Bracci, Maran, & Vagnoni, 2010; Holden, Funnell, & Oldroyd, 2009; Jackson, 2012; Jones & Mellett, 2007; Preston, 1992; Robson, 2003, 2007; Samuel, Dirsmith, & McElroy, 2005; Scott, McKinnon, & Harrison, 2003). Robson (2003), for example, has shown how “dominant individuals”, institutions and wider political and economic developments contributed to the introduction of a managerial accounting system into the NHS during the 1950s. However, whilst the extant historical literature has acknowledged the dominant role medicine has played in shaping hospitals and health services (e.g. Robson, 2007), medical discourses and practices have not been a significant focus of historical study from an accounting perspective. Indeed, the only historical accounting study to explicitly address medical discourses and practices was Preston's (1992) history of American hospital costing, which linked the rise of “anatomy-clinical medicine” (cf. Foucault, 1973) in the 19th century to the emergence of early hospital costing systems. Post-19th century medical discourses and practices, and their potential implications for hospital accounting, have not been considered by historical studies of hospital accounting.²

Contemporary studies have engaged more closely with medical discourses and practices, as many examined how hospital accounting reforms have affected medicine and the medical profession (e.g. Chua, 1995; Jacobs, 2005; Kurunmaki, 2004; Jones & Dewing, 1997). One set of studies suggested that accounting reforms had few effects on medical discourses and practices (Bourn & Ezzamel, 1986a, 1986b; Jones & Dewing, 1997; Pollitt, Harrison, Hunter, & Marnoch, 1988). These studies argued that the effectiveness of accounting practices was limited by factors like clinical freedom and difficulties with measuring the quality of medical care, without exploring these issues in greater detail (e.g. Pollitt et al., 1988). A second set of studies suggested that hospital accounting reforms had significant effects on medical practice and medical professionals (e.g. Chua, 1995; Jacobs, 2005; Kurunmaki, 2004). With regard to the former, it was argued that the introduction of managerial accounting practices rendered the practice of medicine more visible, calculable and standardised (Chua, 1995; Llewellyn & Northcott, 2005; Lowe & Doolin, 1999). With regard to the latter, it was argued that accounting led to the colonisation, hybridisation or polarisation of medical professionals (Broadbent, Laughlin, & Read, 1991; Jacobs, 2005; Kurunmaki, 2004). Collectively, the studies reviewed in this paragraph have provided significant insights into the effects of accounting reforms on medical discourses and practices. Changes in medical discourses and practices beyond those which arose in direct response to accounting reforms have however by and large not been considered by the hospital accounting literature. As a result, the extant literature portrays medical discourses and practices as largely ahistorical, passive and inert phenomena, which only change in response to hospital accounting reforms.

This paper aims to further our understanding of the relationship between medical and hospital accounting discourses by examining conceptions of clinical medicine, as articulated in medical discourses, and their implications for hospital accounting. The paper focuses on the British health services during the two decades after the passing of the National Health Service (NHS) Act in 1946. This timeframe, which will subsequently be referred to as the “post-war period”, was selected for two principal reasons. Firstly, amid concerns regarding the cost of the newly created NHS, this timeframe experienced a surge of interest in hospital accounting which led to the introduction of the first national hospital costing system in 1957 (Montacute, 1962). Secondly, the post-war period saw the publication of numerous articles in British medical journals which discussed the nature of clinical medicine in a more explicit and extensive manner than at any point in subsequent decades.

This paper draws on the governmentality framework (Foucault, 1991; Miller & Rose, 1990; Rose & Miller, 1992) in its examination of the relationship between medical and financial discourses. The next section introduces this framework and discusses its relevance to the present paper. Section 3 subsequently discusses the methods and sources used by this study. Section 4 examines debates in medical journals regarding the nature of clinical medicine during the post-war period. It suggests that whilst many doctors saw the practice of medicine as an art, others started to argue that it was a science. Section 5 outlines calls for the introduction of managerial accounting practices into the early NHS. Section 6 examines suggestions by post-war hospital accountants and administrators that cost accounting was not applicable to the clinical functions of hospitals due to the variability of patients, treatments and diseases, the immeasurable nature of medical practice and the autonomy of medical professionals. The section argues that these suggestions reflected medical discourses on the art of medicine and

² Diagnosis related groups (DRGs) and similar classification systems (e.g. healthcare resource groups) have been the subject of a number of historical accounting studies (e.g. Preston, 1992; Samuel et al., 2005). However, as Samuel et al. (2005) have suggested, DRGs emerged from engineering and economics discourses during the 1960s and 1970s. DRGs only entered medical discourses from the 1980s onwards, where they were perceived as an administrative rather than clinical tool.

concludes by arguing that post-war conceptions of clinical medicine as an art represented this domain in a manner that was not amenable to the calculations of cost accountants. Finally, Section 7 provides a concluding discussion to the paper.

2. Governmentality

Studies in governmentality have emphasised the central role that veridical discourses such as medicine, but also other sciences like sociology, psychology or economics, play in the government of modern, liberal societies (e.g. Burchell, Gordon, & Miller, 1991; Miller & Rose, 1988, 1990, 2008; Rose & Miller, 1992). These studies have focussed on indirect mechanisms of government, the “conduct of conduct”, and emphasised the programmatic and technological aspects of liberal forms of rule (Gordon, 1980; Miller & Rose, 1990; Rose & Miller, 1992).

According to Rose and Miller (1992), the notion of “programmes” refers to the discursive fields that set out the objects and objectives of government. Programmes articulate knowledge claims over the domain to be governed, which depict it in a way that both “grasps its truth” and represents it in a manner that makes it “susceptible to diagnosis, prescription and cure by calculating and normalising intervention” (Rose & Miller, 1992: 182). The languages of medicine, sociology and other human sciences play an important role in this context as they provide the “intellectual machinery” which renders the objects of government thinkable and amenable to intervention.

Whilst programmes set out a vision of the domain to be governed as a knowable and administrable object, the term “technologies of government” denotes the various tools and mechanisms by which this domain is to be acted upon. In this context, Rose and Miller (1992) emphasised the roles played by techniques of notation, computation and calculation in aligning the behaviour of individuals with the ambitions of government. These “humble and mundane mechanisms” serve to “reveal” or rather “construct” visibilities, norms and truths about those to be governed and thereby provide a mechanism for individuals to “act upon their selves and to be acted upon” by others (Miller, 1992: 63; Rose & Miller, 1992).

The close relationship between representing and intervening proposed by the interrelated concepts of programmes and technologies was demonstrated by a number of studies in the field of accounting (e.g. Burchell, Clubb, & Hopwood, 1985; Miller, 1991; Miller & O’Leary, 1987; Power, 1997). Miller and O’Leary (1987), for example, linked the advent of standard costing in Britain and the United States with the emergence of new ways of knowing and representing the factory. They suggested that during the first half of the 20th century the factory came to be seen in the terms of scientific management, which translated wider concerns with the efficiency of the nation into a vision of the factory as a “machine-like” (p. 254) succession of norms and standards. Miller and O’Leary (1987) argued that cost accounting promised to supply a means of making this vision operable. It allowed for scientific management’s norms and standards to be expressed in terms of dollars and pounds, and provided a calculative apparatus which would render the individual worker “routinely knowable and accountable” (p. 253). This “scientific management—cost accounting complex”, Miller and O’Leary (1987) argued, constituted the factory as a “very particular kind of space [...] in which efficiency and rationality would prevail” (p. 251) and enabled accounting to extend its scope beyond its traditional focus on stewardship. By incorporating scientific management’s knowledge claims into financial numbers, cost accounting came to be seen as a “truthful” representation of, as well as a “legitimate” tool for intervention on, the efficiency of “calculable” and “governable” workers (Miller, 1992; Miller & O’Leary, 1987).

The relationship between knowing a domain and acting upon it is argued to be of particular relevance to the present study as it suggests that hospital accounting practices cannot be fully understood without considering the manner in which the hospital is “known” and “represented”. Indeed, a number of studies conducted in the United States have already associated hospital accounting technologies with economic and managerial conceptions of hospitals and medical practice (e.g. Chua & Degeling, 1993; Samuel et al., 2005). Certainly in the UK, economic and managerial conceptions of hospitals and medical practice have however struggled to gain wider acceptance. Despite a succession of NPM reforms (e.g. DHSS, 1983; DoH, 1989, 2002), medical discourses and practices continue to play a significant role in defining and running British hospitals (e.g. Jones & Dewing, 1997; Pollitt et al., 1988). In light of these considerations, this study focuses on the manner in which medical discourses have “represented” the practice of medicine, and how these conceptions of clinical medicine have interacted with hospital costing discourses during the post-war period.

3. Methods

The discussion of the relationship between conceptions of clinical medicine and hospital accounting developed by the present paper draws on an analysis of medical and hospital accounting discourses from the first two decades after the NHS Act of 1946. This focus on discourses reflects the strong emphasis governmentality studies placed on language (e.g. Miller & Rose, 1990; Rose & Miller, 1992). Language, they argued, does not merely describe social reality but constitutes it — it “construct[s] the very objects to which [it] refer[s]” (Prior, 1988: 92; Miller and Rose, 1990; Rose & Miller, 1992). Discourse thus delimits the possibilities for thought and action (Jorgensen & Phillips, 2002), including the possibilities for applying accounting in the health services.

Rose and Miller (1992) directed us to the study of “public” documents like government reports or White Papers in order to develop an understanding of how specific ways of knowing and representing a domain are implicated in its government. Such public documents, they argued, allow policy makers, experts and other professionals to put forward their programmatic visions of governable domains and “configure specific locales and relations in ways thought desirable” (Rose & Miller, 1992: 181). Following these suggestions, the present study has examined books, reports, White Papers and other government

publications from the post-war period, as well as articles from a range of professional journals closely linked to the accounting, hospital administration and medical professions (i.e. the *British Medical Journal*, *The Accountant*, *The Hospital* and *The Lancet*). Contributions which discussed the nature of clinical medicine, the application of cost accounting in the health services and related topics were selected from these sources and analysed.

4. The nature of clinical medicine

This section provides an overview over medical discourses on the nature of clinical medicine during the post-war period. Before turning to this issue, relevant developments in the history of medicine prior to the timeframe investigated by this paper are briefly discussed.

4.1. The art and science of medicine before 1946

Since antiquity, doctors have sought to underpin the practice of medicine with “scientific” theories. For most of the past two millennia, the theory of humoralism, as taught by Hippocrates and Galen, provided the scientific basis for Western medicine (e.g. Porter, 1999). With the advent of “anatomy-clinical medicine” (Foucault, 1973) at the turn of the 19th century, pathological anatomy emerged as the “queen of the medical sciences” (Bynum, 2008) and during the second half of the 19th century, medicine became increasingly rooted in the then emerging sciences of physiology, pharmacology and biochemistry. Despite this emphasis on a scientific basis for clinical medicine, the practice of medicine itself was not perceived as a scientific activity in Victorian Britain. Instead, it was perceived as an “art” which depended on “a classical education”, the “bearing of a gentleman” and, above all, “clinical experience” (Lawrence, 1985: 510).

It was only in the 20th century that sustained attempts to introduce scientific approaches to the practice of medicine itself emerged.³ An important catalyst in this context was the British Medical Research Council (MRC), which conducted a series of controlled clinical trials from the 1920s onwards that represented the first sustained attempts to systematically evaluate the effectiveness of clinical interventions by means of the “experimental” or “scientific method” (Matthews, 1995). Whilst the MRC’s early controlled trials were perceived to suffer from a number of methodological problems, most notably that researchers biased their results by allocating healthier patients to treatment rather than control groups (Doll, 1998), they provided the background against which calls emerged for the practice of medicine to become more “rational” and “scientific”. The most vocal of these calls came from Thomas Lewis (1935), a cardiologist at London’s University College Hospital, who urged professors of medicine to “teach the student to appreciate the value of evidence, and [to] encourage logical forms of argument and sequential reasoning” (p. 635).

Others however remained firmly committed to notions of clinical medicine as an art. The most prominent of these was Wilfred Trotter, a colleague of Lewis’s at University College Hospital and the “Sergeant Surgeon to the King”. Trotter (1935) suggested that since the clinician had to “deal with and act upon incompletely definable situations, [...] medicine continue[d] to be largely an activity of a non-scientific kind” in which “the exercise of the rational mind in the attempt to integrate and theorise medicine [had] always proved singularly ineffective, if not harmful” (p. 611). Clinical medicine, Trotter (1935) further suggested, was a “practical art” which was taught by “apprenticeship” and consisted of “precepts and rule[s] of thumb which are applied to individual cases in the light of trained judgement” (p. 612). This “practical art”, he continued, relied on “experience”, “general culture” and “inborn capacity” (p. 613).

Debates regarding the nature of clinical medicine intensified after World War II. The following two sub-sections in turn discuss discourses on the art and the science of clinical medicine during the post-war period.

4.2. The art of clinical medicine

During the two decades after the NHS Act of 1946, a range of clinicians outlined their vision of the practice of medicine as an intuitive and experience-based art. These clinicians rejected calls for more scientific approaches to clinical medicine as pioneered by Lewis (1935), often on grounds of the perceived variability of patients and diseases.

An early proponent of this view was Lionel Whitby, the Regius Professor of Physic at the University of Cambridge, who suggested that “medicine could never become an exact science because normal variations in individuals have such a wide range that automatic and mechanical treatment is prohibited” (The Lancet, 1946: 22). Whitby (1951) elaborated on these comments, suggesting that clinical medicine could not become a science “unless each patient can be reduced to standard form” and that “fundamental” aspects of medical practice were an “art which is more often inborn than acquired and which develops with experience” (p. 131).

Cameron (1951), a professor of tuberculosis, similarly insisted that “medicine is an art” in light of the perceived variability of patients and diseases. Henderson (1955), another clinician, proposed that doctors are “faced in any patient by factors which

³ There had been earlier attempts to introduce scientific approaches to the practice of medicine, most notably the *méthode numérique* pioneered by the French physician Pierre Louis in the 1820s and 1830s. Such “clinical counting” approaches however only played a marginal role in 19th century medicine as “clinical experience, informed by pathological and physiological knowledge, [was perceived] as a more valid form of knowledge than mere counting” (Weisz, 2005: 378–379).

cannot be assessed or measured”, factors, which he subsequently described as “imponderable” (p. 928). Thomson (1958), a professor of therapeutics, moreover emphasised the roles of “intuition, sympathy and compassion” in the practice of medicine (p. 121), whilst Lees (1962), a pathologist, suggested that clinical medicine was not a science, but an art in which “experience is everything” (p. 91).

The picture of clinical medicine painted by the above quotations overlaps to a significant extent with medical sociologists' accounts of post-war medical discourses and practices in Britain and the United States (e.g. Armstrong, 1977; Berg, 1995; Freidson, 1970). Based on an analysis of editorials of American medical journals, Berg (1995), for example, suggested that in the 1950s and 1960 clinical practice was perceived to involve the application of scientific knowledge, but not to be a science itself. Instead, the practice of medicine was perceived as “an art requiring medical ingenuity, experience, skill and individual attention” (Berg, 1995: 442).

The materials presented in this section moreover suggest that clinical knowledge was seen to derive neither from laboratory nor clinical research but, above all, from the clinical experience of the individual medical practitioner. This form of knowledge was local, subjective, implicit and inseparable from the individual clinician. It was, in Freidson's (1970) terms, “particularistic” rather than “universalistic” (p. 170). Freidson (1970) moreover suggested that “particularistic” notions of clinical knowledge had significant implications for attempts to assess or control medical practice as they allowed clinicians to argue that their work was “unique” and “not really assessable by some set of stable rules or by anyone who does not share [...] the same firsthand experience” (p. 180).

A number of medical sociologists have furthermore linked the emphasis that discourses on the art of medicine placed on clinical experience with the notions of clinical freedom and autonomy (e.g. Armstrong, 1977; Freidson, 1970). Since local and subjective notions of clinical knowledge made “evaluation or control over the quality of medical care virtually impossible” (Armstrong, 1977: 600), doctors emphasised their professional and moral integrity in order to obtain and maintain the confidence of their patients. Medical discourse portrayed the doctor as a gentleman practitioner who treated patients “to the best of his ability and judgement” without interference from political, administrative or other concerns (Fox, 1951: 118).

During the post-war period, the importance doctors placed on the notion of clinical freedom manifested itself in concerns regarding the nationalisation of the health services and its implications for the autonomy of medical professionals. A physician from London, for example, suggested that NHS Act of 1946 was a threat to the doctor's “birthright of professional freedom” and argued that under state ownership medicine would become “gradually but inevitably a branch, at one remove, of the Civil Service, whose primary duty will be to the Government which pays and controls it” (p. Cox, 1946: 707). Such concerns eventually culminated in an open letter signed by the presidents of the Royal Colleges of Physicians, Surgeons and Obstetricians which sought assurances regarding the “freedom of the profession and the availability to the people of independent medical advice” from Aneurin Bevan, the Minister of Health (Moran, Webb-Johnson, & Gilliatt, 1947: 66). In a reply to this letter, the Minister addressed these concerns by suggesting that “it is a basic principle of the new Service that there should be no interference with the clinical freedom of any doctor — specialist or general practitioner” (Bevan, 1947: 67).

These reassurances initially failed to allay doctors' concerns regarding the implications of nationalisation on “clinical freedom and individual judgement” (e.g. Leak, 1948a: 216, 1948b; BMJ, 1948a). However, after the NHS Act came into effect in July 1948, articles regarding the perceived threat of nationalisation to clinical freedom largely ceased to be published in *The Lancet* and the *BMJ*. The Minister of Health had stood by his assurances and the freedom of doctors to practice their art independent of external influences had become a cornerstone of the “implicit concordat” between the medical profession and the state which underlay the creation of the NHS (cf. Klein, 2006).⁴

4.3. *The science of clinical medicine*

Against the background of wider interest in more “rational” approaches to social policy (e.g. Rose & Miller, 1992), a number of clinicians started to propose alternatives to the traditional art of medicine during the post-war period. Building on the Medical Research Council's early work on controlled clinical trials as well as on Lewis's (1935) suggestions regarding a greater emphasis on logic and evidence in the practice of medicine, they called for the adoption of more scientific or mathematical approaches to clinical medicine. Some clinicians only made tentative steps in this direction. Cruikshank (1946), a professor of surgery, proposed a vision of clinical medicine in which “every patient becomes the subject of original research to discover previously unknown truths”, which would be accomplished by means of the “scientific method” (p. 843). Cruikshank (1946) however also noted that the application of the scientific method to clinical medicine was an “art” which required “tact, experience, judgement, and profound knowledge of human nature” (p. 843).

Others called for a clearer break with traditional notions of medicine as an art. Jones (1952), a cardiologist, urged his fellow clinicians to develop a “scientific attitude of mind” in their practice (p. 466), whilst Dornhorst (1953), a reader in medicine at St. Thomas's Medical School, proposed that “there is no limit to the scientific development of [clinical] knowledge, which is essentially statistical and which will no doubt become increasingly mathematical” (p. 468). Arnott (1955), a professor of medicine at the University of Birmingham, moreover suggested that “medicine in all its activities must be a scientific

⁴ According to Klein (2006), this concordat consisted of the profession accepting the nationalisation of the health service and the right of parliament to set the NHS budget, and the government granting the profession wide-ranging freedom in shaping and running health services within the constraints of this budget.

discipline” (p. 783) as he denounced traditional approaches to clinical practice as “sentimental obscurantism that masquerades under the euphemism of the art of medicine” (p. 785).

In addition to such calls for scientific approaches to clinical medicine, the [Medical Research Council \(1948\)](#) published a new type of controlled clinical trial which addressed the potential bias in allocating patients to treatment and control groups by adopting R.A. Fisher's (1925) technique of randomisation. The [BMJ \(1948b\)](#) hailed this “randomised controlled trial” as a great methodological advance and argued that, for the first time in the history of medicine, the effectiveness of clinical interventions could be evaluated in an entirely “impartial” and “rigorous” manner (p. 792).

Whilst discourses regarding scientific and mathematical approaches to clinical medicine were somewhat tentative and incoherent during the post-war period, they appeared to articulate an alternative vision of clinical medicine to the traditional art. The emergence of randomised controlled trials in particular made possible new forms of clinical knowledge. Post-war discourses on the art of medicine, as reviewed in the previous sub-section, emphasised the individuality and variability of patients and depicted medical expertise as a highly personal, subjective and localised form of knowledge which emerged out of the clinical experience of individual practitioners. The randomised controlled trial, on the other hand, implied the concept of an average, if not standardised, patient as well as explicit and universal notions of clinical knowledge. Its emergence hinted at the possibility for non-medical professionals to assess and evaluate at least elements of medical practice.

However, if clinical practice is concerned with the diagnosis, prognosis and treatment of patients, randomised controlled trials, as discussed during the post-war period, applied only to the latter. Scientific or mathematical models for diagnosis or prognosis were not proposed in the *BMJ* and *The Lancet* during the timeframe investigated by this paper. The application of randomised trials was further constrained by ethical concerns, as many opposed such “experiments on human beings” ([BMJ, 1955: 526](#)), and their use remained almost exclusively restricted to assessing the effectiveness of pharmaceuticals during the post-war period ([Bunker, Barnes, & Mosteller, 1977; Cochrane, 1972](#)). Perhaps reflecting these circumstances, discourses on the science of clinical practice remained marginal during the post-war period, and the possibility for non-medical professionals to assess or evaluate the practice of medicine only started to be discussed from the 1970s onwards (e.g. [Armstrong, 1977; Cochrane, 1972](#)).

5. Hospital costing

In the early 20th century, a vast and little coordinated array of voluntary hospitals, municipal hospitals, specialist hospitals and mental hospitals provided health services in Britain (e.g. [Rivett, 1998](#)). Under the leadership of the King's Fund,⁵ a number of London-based voluntary hospitals had adopted [Burdett's \(1893\)](#) “uniform system of accounts for hospitals”, which 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](#)). The vast majority of hospitals however operated their own, customised accounting systems, leaving British hospital accounting in a similarly fragmented state as the British health services.

Consistent with the more general shift towards a “welfarist” mode of government ([Rose & Miller, 1992](#)), the inter-war years saw calls for the state apparatus to play a more central role in the government of the health services (e.g. [BMA, 1930; MoH, 1920; PEP, 1937](#)). These calls culminated in the publication of a government White Paper entitled “A National Health Service” towards the end of World War II, which proposed to unify the disparate British health services into one “rational and effective” system ([MoH, 1944](#)). As the NHS Act passed parliament in 1946 and came into effect in 1948, a number of accountants pointed to “modern” cost accounting techniques as a means of rendering such a rational and effective health service operable (e.g. [Millin, 1948; The Accountant, 1946, 1948](#)). Against the background of wider social interest in the emerging concept of “management accounting” (e.g. [AACCP, 1950](#)), and amid concerns that the introduction of a comprehensive health service free at the point of use was responsible for large increases in health expenditure, a broad range of commentators including hospital administrators and medical professionals started to call for hospital accounting reform in the early 1950s (e.g. [BMJ, 1952; The Hospital, 1952; The Lancet, 1952](#)). In response to these calls, the Ministry of Health commissioned no fewer than four reports on the subject of hospital costing (i.e. [King's Fund, 1952; MoH, 1955; Nuffield Trust, 1952; RHBT, 1952](#)).

Similar to later attempts to introduce cost accounting into hospitals (e.g. [Chua, 1995; Samuel et al., 2005](#)), many proponents of hospital costing emphasised the perceived similarities between hospitals and industrial or business organisations. A leading article in [The Accountant \(1952\)](#), for example, suggested that “while few hospital boards would probably admit that their problems were akin to those of industry, or vice versa, there must be many points of extreme similarity” and argued that the industrial approach to costing and management “would, without a doubt, appear to be the right one [for the hospital service]” (p. 661). The report of the [King's Fund \(1952\)](#) even dedicated an entire paragraph to highlighting the perceived similarities between hospitals and commercial organisations (p. 31).

Consistent with these suggestions, the proponents of hospital costing reform proposed to adopt a system which mirrored those which had “proved so effective in the business world” ([The Accountant, 1946: 78, 1957; Nuffield Trust, 1952](#)). Whilst the recommendations of the three Ministry of Health commissioned reports published in 1952 differed on some of the technical

⁵ The King's Fund is a charitable organisation which has supported hospitals and health service research in England since its foundation by King Edward VII in 1897.

detail, they were in agreement that a departmental unit costing system ought to be introduced into the nationalised hospital service (King's Fund, 1952; Nuffield Trust, 1952; RHBT, 1952). The calculation of unit costs for hospital departments (e.g. cost per 1000 lb. steam raised for boiler houses, cost per meal supplied for kitchens) would, it was argued, allow for departmental “efficiency” to be “measured” and for “significant” comparisons between hospitals to be made (King's Fund, 1952: 17). A final report, prepared by the Ministry of Health itself (MoH, 1955), also endorsed the departmental unit costing approach and such a system was introduced into the NHS in April 1957. Once operational, the new costing system was criticised as, *inter alia*, too elaborate (e.g. Hunt, 1961; MoH, 1965) and a revised and simplified version of the departmental costing system was introduced in 1966.

6. Hospital costing and the art of medicine

Industrial conceptions of the hospital, and the associated “need” to introduce managerial costing practices into the health service, were widely accepted by accountants, hospital administrators and politicians during the post-war period. Even the medical profession appeared to be supportive. An editorial in *The Lancet* (1952), for example, suggested that a departmental costing system had “many advantages” and would make a “very valuable contribution” to the administration of the health service (p. 1067).

However, post-war hospital accounting discourses also suggest that the departmental costing system was concerned with the administrative and “hotel”, but not with the clinical, aspects of hospital costliness. The administrative focus of departmental costing manifested itself in two ways. Firstly, the departmental costing system mirrored the administrative rather than the clinical structure of hospitals. It calculated unit costs for kitchens, laundries and boiler houses rather than for cardiology, dermatology or gynaecology departments. The units costed were similarly administrative in nature as the costs per “meal supplied” or “1000 lb. of steam raised” rather than the costs per operation or treatment were measured (e.g. King's Fund, 1952; Nuffield Trust, 1952).

Secondly, departmental costing's focus on the administrative and hotel aspects of hospital efficiency was reflected in the proposed uses and users of the cost information. With regard to its uses, it was suggested that departmental costing was to serve as “an instrument of administrative control” (*The Accountant*, 1949) or as “an aid to management” (e.g. King's Fund, 1952; MoH, 1955). With regard to its proposed users, it was widely suggested that departmental costing ought to be designed for the use of “heads of departments”, which included a wide range of managerial positions such as “catering officers” and “chief engineers”, but no clinicians (King's Fund, 1952; Livcock, 1950; *The Lancet*, 1952). More generally, hospital accountants and administrators made little mention of doctors, and their potential roles in the context of hospital costing during the early years of the NHS (e.g. King's Fund, 1952; Nuffield Trust, 1952).

The administrative focus described by the above paragraphs is consistent with previous accounts of departmental costing in the historical hospital accounting literature. Robson's (2003) study of departmental costing in the early NHS suggested that this approach did not facilitate comparisons between clinicians and that their “total clinical autonomy remained sacrosanct” (p. 117). Preston (1992) reached similar conclusions in his account of early departmental costing systems in the United States. He argued that these systems were concerned with “functional departments for which responsibility was placed upon administrators or managers” whilst doctors were “largely exempt from economic controls” (Preston, 1992: 75).

Functionalist studies conducted in the 1970s and 1980s also highlighted the strong administrative focus of traditional hospital accounting and management practices (e.g. Fetter & Freeman, 1986; Harris, 1977). These functionalist studies argued that hospital accounting had historically been concerned with the “intermediate outputs” (Fetter & Freeman, 1986) or “supply divisions” (Harris, 1977) of hospitals and called for cost accounting to be extended to encompass the hospital's final “products” and “demand divisions” (i.e. medical treatments and professionals). During the period investigated by the present paper, the application of cost accounting to the clinical domain was however widely rejected by hospital accountants, administrators and government reports (e.g. Bates, 1952; McLachlan, 1952a; Trillwood, 1956). The following sub-sections in turn introduce the three principal reasons these sources brought forward as to why they thought that industrial conceptions of the hospital and associated cost accounting techniques were not applicable to the clinical functions of hospitals.

6.1. The variable and incomparable nature of the practice of medicine

During the debates regarding the departmental hospital costing system both before and after its introduction in 1957, a number of hospital accountants and administrators suggested that cost accounting could not be applied to the clinical functions of hospitals because patients, diseases and treatments were not standardised (e.g. McLachlan, 1952a; Paine, 1967). The variability of these factors, it was argued, made it impossible to compare “like with like”. McLachlan (1952a), a hospital accountant, for example noted that while “modern” cost accounting systems were of “great value” in many commercial undertakings, he was “doubtful whether this argument is universally applicable to hospitals” (p. 411). He added that such costing systems would only apply to clinical settings “if it was the policy of the state to standardise treatment” and suggested that the “possibility of this is remote and unthinkable” (McLachlan, 1952a). The report of the King's Fund (1952) similarly noted that clinical costing approaches implied “a ‘blueprint’ precision impossible of attainment in the treatment of patients” (p. 34) and Paine (1967), a hospital administrator, proposed that “the individuality of the patient and the doctor, and the instability of the third party, the disease, make it impossible ever to measure the efficiency with which a hospital's basic task – clinical treatment – is carried out” (p. 27).

The suggestions that the absence of “standard patients” precluded the application of cost accounting to the clinical functions of hospitals were not only concerned with the circumstance that patients suffered from a wide range of diseases which would later become the focus of various case-mix accounting approaches such as DRG-costing. [McLachlan \(1952b\)](#), for example, suggested that “the treatment of [...] patients even when suffering from the same ailment is not necessarily comparable and the cost may therefore differ” (p. 225). [Trillwood \(1956\)](#), a hospital administrator, similarly noted that “treatment of similar conditions will vary with the differing techniques of the medical staff” and that it consequently could not be “compared usefully” (p. 29). Finally, [Montacute \(1962\)](#), a hospital accountant, suggested that in light of these variations, developing a comprehensive cost accounting system for hospital care would represent an attempt at “comparing the incomparable” (p. 208).

6.2. The immeasurable nature of the practice of medicine

In addition to the variability of patients, diseases and treatments, a number of hospital accountants and administrators identified the perceived immeasurability of the quality of medical care as a significant obstacle to the application of cost accounting to the clinical domain. [Sherren \(1952\)](#), a correspondent of *The Accountant*, for example suggested that it was “obviously not possible to measure the quality of a hospital’s ‘production’, apart from the ‘trading’ departments” (p. 712). In light of this circumstance, [Sherren \(1952\)](#) furthermore suggested that “clinical departmental costs [would] inevitably be judged by reference to cost alone” as well as “subject to non-measurable quality differences” (p. 712).

[Bates \(1952\)](#), a hospital administrator, similarly highlighted the perceived immeasurability of the quality of medical care as he emphasised the differences between the factory and the hospital as well as the limitations of cost accounting in the health services:

The whole resources of a hospital are applied to one end – to cure a patient as quickly and completely as possible. The whole resources of a toffee factory are applied to one end – to make toffee of the maximum quality at the minimum price. Financial routine can put an accurate price on a pound of toffee; it cannot put a value on a patient’s recovery. The quality of toffee is a matter of fact and can be adjusted to suit financial requirements. The quality of treatment afforded to a patient is not a matter of fact and no financial research will ever measure it. (p. 494).

6.3. The reluctance to control or interfere with the practice of medicine

The final obstacle to the application of cost accounting to the clinical functions of hospitals identified by post-war hospital accountants, administrators and government reports was the perceived undesirability or impossibility of controlling or interfering with the practice of medical professionals. [Trillwood \(1956\)](#), once again invoked a comparison with the business world to illustrate this issue. He suggested that whilst in industry the managing director had the authority to “issue or countermand orders” to all employees, in the hospital, the “administrator cannot say to the physician, you will do your job but you must not use the X-ray department, or if you do, you will limit yourself to one X-ray per patient” ([Trillwood, 1956](#): 28–29). A committee appointed by the Minister of Health to investigate the cost of the NHS similarly raised this issue ([Guillebaud, 1956](#)). Chaired by an economist, the committee’s report generally welcomed the then imminent introduction of the departmental costing system, but warned that whilst doctors ought to be aware of the cost of hospital services, this knowledge “should not affect their actions when deciding what is best for their patient” ([Guillebaud, 1956](#): 133). A commentator writing in *The Hospital* moreover suggested that it “would clearly be an impertinence for anyone not intimately concerned in medical work in a hospital to attempt any critical appreciation of clinical practice” ([Spectator, 1958](#)) and an unnamed hospital accountant argued that he “had control only over the business side [of hospitals but] could not control 22 professors who prescribed what they thought best” ([The Hospital, 1967](#): 473).

The materials presented in this section show that a range of hospital accountants, administrators and government reports from the post-war period suggested that cost accounting was not applicable to the clinical functions of hospitals. Many of these sources linked these suggestions with their conceptions of clinical medicine (e.g. [Bates, 1952](#); [Trillwood, 1956](#)). These sources rejected notions of the practice of medicine as an industrial or standardised process, which, in [Rose and Miller \(1992\)](#) terms, were not seen to “grasp the truth” of the clinical domain. Instead, post-war hospital accountants and administrators portrayed clinical medicine in a manner which bore great similarities with medical discourses on the art of medicine, as discussed in Section 4 of this paper. In particular, the reasons they cited for rejecting the use of cost accounting in the clinical domain, namely the variability of patients and diseases, the immeasurable nature of clinical practice and the autonomy of medical professionals, closely resembled medical debates on the art of medicine. In light of these suggestions, this paper argues that notions of clinical medicine as an art, as articulated in medical discourses and reflected in hospital accounting discourses, played a central role in the perceived inapplicability of cost accounting to the clinical functions of hospitals during the post-war period.

The perceived inapplicability of cost accounting to the clinical functions of hospitals was however not a simple function of the dominance of medical discourses in the clinical domain. The presence of a strong professional discourse, however resilient, does not necessarily pose an insurmountable problem to the introduction of accounting into a field. Indeed, as [Miller and O’Leary \(1987\)](#) have shown, the “almost messianic” (p. 252) role engineering and scientific management discourses

played in industry during the early decades of the 20th century was closely related with the emergence of standard costing and the extension of accounting's remit to include managerial roles in addition to its traditional treasury functions. This paper argues that it was the nature of the dominant medical discourses that constituted an obstacle for the perceived applicability of cost accounting in the clinical domain. Whilst scientific management represented industry as a space of “efficiency and rationality” which was readily amenable to the calculations of cost accountants (Miller & O'Leary, 1987: 251), the materials presented in this section suggest that post-war discourses on the intuitive and experience-based art of medicine did not represent clinical medicine in a manner that was susceptible to the calculations of accountants, nor to “diagnosis, prescription and cure by calculating and normalising intervention” more generally (Rose & Miller, 1992). Unlike scientific management representation of the factory, which emphasised explicit norms and standards that could easily be translated into dollars or pounds (Miller & O'Leary, 1987), medical knowledge claims, which were implicit, subjective and local in nature, could not be represented in accounting numbers. As a result, in the eyes of post-war hospital accountants and administrators, cost accounting provided neither a “truthful” representation of, nor a “legitimate” tool for intervention in, the clinical domain (Miller, 1992).

7. Concluding discussion

This paper has examined the relationship between medical and hospital accounting discourses in the early years of the NHS. In particular, it has focussed on conceptions of clinical medicine, as articulated in medical discourses, and their implications for attempts to introduce managerial accounting techniques into the hospital service. The paper has shown that industrial conceptions of the hospital achieved widespread acceptance during the post-war period and linked them to the introduction of a departmental hospital costing system into the NHS. It has however also shown that the perceived applicability of cost accounting and industrial notions of the hospital were restricted to the administrative and hotel functions of hospitals during this period. Hospital accountants, administrators and government reports suggested that cost accounting was not applicable to the clinical functions of hospitals due to the variability of patients and diseases, the immeasurable nature of clinical practice and the autonomy of medical professionals (e.g. Bates, 1952; Trillwood; 1956). These suggestions were argued to closely reflect medical discourses on the art of medicine, which portrayed clinical medicine as an implicit, intuitive and experience-based practice (e.g. Thomson, 1958; Whitby, 1951). On this basis, the paper suggested that notions of the art of medicine, as articulated in medical discourses and reflected in hospital accounting discourses, had significant implications for hospital accounting during the post-war period. They were a central factor in the apparent reluctance amongst hospital accountants, administrators and others to extend departmental costing to the clinical functions of hospitals.

The findings of this paper are argued to further our understanding of the complex role of medical expertise in Foucauldian studies of government (e.g. Burchell et al., 1991; Flynn, 2002; Osborne, 1993; Rose & Miller, 1992). On one hand, studies in governmentality have suggested that the medical profession entered into an alliance with political authorities and assumed a central role in the operation of modern forms of government (Foucault, 1980; Miller & Rose, 1990; Rose & Miller, 1992). Medicine, they argued, provided the intellectual machinery that represented various domains as “knowable, calculable and administrable object[s]” and rendered them amenable to calculation and intervention (Miller & Rose, 1990: 5). On the other hand, Foucauldian studies have suggested that medical expertise can pose significant obstacles to the ambitions of political authorities in the specific context of governing health services (e.g. Flynn, 2002; Rose & Miller, 1992). The medical profession has at times used its position at the heart of government to form “enclosures” (Kurunmaki & Miller, 2011; Rose & Miller, 1992) in which it promoted its own interest over those of its political masters. Rose and Miller (1992) identified the early NHS as a medical enclosure in which doctors, to a large extent, managed to dominate the government of the health services and resist “all attempts to make it calculable in a non-medical vocabulary” (p. 194). The findings of this paper suggest that discourses on the art of medicine represented an important resource in the profession's efforts to maintain the post-war medical enclosure. Rather than as a knowable and administrable object amenable to calculation and intervention (Miller & Rose, 1990), these discourses portrayed clinical medicine as an implicit and intuitive practice which was incommensurate with non-clinical forms of reasoning and calculation (Espeland & Stevens, 1998). As such, discourses on the art of medicine played a significant role in defending the medical enclosure by placing at least the medical aspects of the post-war NHS beyond the scrutiny of non-medical professionals.

The findings of this paper contribute to both the historical and contemporary literatures on hospital accounting. With regard to the historical literature, this study has shown that medical discourses are an important factor in the historical development of hospital accounting which need to be considered alongside the various economic, political and institutional factors emphasised by previous studies in this field (e.g. Jones & Mellett, 2007; Robson, 2003, 2007; Scott et al., 2003). The present study has illustrated the relevance of medical discourses in this context with reference to the specific example of conceptions of clinical medicine and their implications for the post-war departmental costing system. However, in light of the almost complete dominance medical rationales and professionals exerted over Western health services during large parts of the 20th century, this paper is only a first step towards exploring the historical relationship between medical and accounting discourses.

The findings of this paper however not only contribute to our historical understanding of hospital accounting. They are also of relevance to contemporary studies, many of which have examined the effects of accounting reforms on medical discourses and practices (e.g. Chua, 1995; Jacobs, 2005; Jones & Dewing, 1997; Kurunmaki, 2004; Llewellyn & Northcott, 2005; Rea, 1994). As

suggested in the introductory section of this paper, this focus on the effects of accounting reform on medicine, together with a largely absent consideration of the historical development of medicine, has resulted in a somewhat limited consideration of medical discourses and practices by the extant accounting literature. Specifically, it was suggested that this literature, collectively, portrayed such discourses and practices as passive, inert and ahistorical phenomena which, if at all, change primarily in response to hospital accounting reforms. The present study, on the other hand, found medical discourses to be dynamic and powerful, capable of shaping accounting discourses and practices as well as being shaped by them.

These findings are argued to be of relevance to studies which have emphasised the constitutive and transformative effects of accounting reforms in the health services (e.g. Chua, 1995; Llewellyn & Northcott, 2005; Lowe & Doolin, 1999) as well as those which have highlighted the resilience of medical discourses and professionals in the face of such reforms (e.g. Jones & Dewing, 1997; Pollitt et al., 1988; Rea, 1994). With regard to the latter set of studies, it is noted that notions of clinical freedom and the immeasurable nature of the quality of medical care, which this paper has linked to conceptions of clinical medicine as an art, have consistently been identified as among the principal obstacles facing British hospital accounting reform during the last 30 years (e.g. Bourn & Ezzamel, 1986a, 1986b; Jones & Dewing, 1997; Kurunmaki et al., 2003; Pollitt et al., 1988; Preston et al., 1992; Rea, 1994). This could indicate that notions of clinical medicine as an art continue to have significant implications for hospital accounting and that a closer engagement with medical discourses may further our understanding of the obstacles and resistances faced by hospital accounting in the present as well as in the post-war period.

With regard to the studies which have emphasised the constitutive and transformative role of hospital accounting, the emergence of discourses on a science of clinical medicine documented by this paper is argued to be of potential relevance. Whilst these discourses were not reflected in hospital costing debates during the post-war period, they may be of significant interest to a set of recent studies which have argued that NPM inspired hospital accounting reforms have rendered the practice of medicine more visible, calculable and standardised (e.g. Chua, 1995; Llewellyn & Northcott, 2005; Lowe & Doolin, 1999). The calls among clinicians to adopt scientific approaches to clinical medicine documented by this paper hint at the emergence of medical discourses promoting visibility, calculability and standardisation in the practice of medicine, which would intensify from the 1970s onwards and lead to the emergence of the concept of “evidence-based medicine” (e.g. Cochrane, 1972; Fletcher, Fletcher, & Wagner, 1982; Sackett, Rosenberg, Muir Gray, Haynes, & Richardson, 1996). Such scientific notions of clinical medicine could potentially play an important but as yet unresearched role in relation to accounting reforms in the health services. Their emergence and subsequent proliferation may have been a precondition for the development of disease and specialty costing initiatives during the 1970s as well as an ally of NPM attempts to make medicine calculable from the 1980s onwards.

References

- AACP. (1950). *Management accounting: Report of a specialist team which visited the United States of America in 1950*. London: Anglo-American Council for Productivity.
- Abbott, A. (1988). *The system of professions. An essay on the division of expert labour*. The University of Chicago Press.
- Armstrong, D. (1977). Clinical sense and clinical science. *Social Science and Medicine*, 11(11–13), 599–601.
- Arnott, M. (1955). The climate of discovery. *The Lancet*, 15th October.
- Bates, S. (1952). Two views on functional costing. *The Hospital*, July.
- Berg, M. (1995). Turning a practice into a science: reconceptualizing postwar medical practice. *Social Studies of Science*, 25(3), 437–476.
- Bevan, A. (1947). Presidents of Royal Colleges and Mr Bevan. *British Medical Journal*, 1, 66.
- BMA. (1930). *A general medical service for the nation*. London: British Medical Association.
- BMJ. (1948a). Mr Bevan intimidates. *British Medical Journal*, 1, 257.
- BMJ. (1948b). The controlled therapeutic trial. *British Medical Journal*, 2, 791.
- BMJ. (1952). Hospital cost accounting. *British Medical Journal*, 2, 1247.
- BMJ. (1955). Experiments of human beings. *British Medical Journal*, 1, 526.
- Bourn, M., & Ezzamel, M. (1986a). Costing and budgeting in the National Health Service. *Financial Accountability and Management*, 2(3), 203–225.
- Bourn, M., & Ezzamel, M. (1986b). Organisational culture in hospitals in the National Health Service. *Financial Accountability and Management*, 2(1), 53–71.
- Bracci, E., Maran, L., & Vagnoni, E. (2010). Saint Anna's Hospital in Ferrara, Italy: accounting and organizational change during the devolution. *Accounting History*, 15(4), 463–504.
- Broadbent, J., & Guthrie, J. (1992). Changes in the public sector: a review of recent “alternative” accounting research. *Accounting, Auditing and Accountability Journal*, 5(2), 3–31.
- Broadbent, J., & Guthrie, J. (2008). Public sector to public services: 20 years of “contextual” accounting research. *Accounting, Auditing and Accountability Journal*, 21(2), 129–169.
- Broadbent, J., Laughlin, R., & Read, S. (1991). Recent financial and administrative changes in the NHS: a critical theory analysis. *Critical Perspectives on Accounting*, 2(1), 1–29.
- Bunker, J., Barnes, B., & Mosteller, F. (1977). *Costs, risks and benefits of surgery*. Oxford: Oxford University Press.
- Burchell, S., Clubb, C., & Hopwood, A. (1985). Accounting in its social context: towards a history of value added in the United Kingdom. *Accounting, Organisations and Society*, 10(4), 381–413.
- Burchell, G., Gordon, C., & Miller, P. (1991). *The foucault effect: Studies in governmentality*. The University of Chicago Press.
- Burdett, H. (1893). *The uniform system of accounts*. London: The Scientific Press.
- Bynum, W. (2008). *The history of medicine*. Oxford: University Press.
- Cameron, C. (1951). The physician and his art. *The Lancet*, 25th August.
- Chua, W. (1995). Experts, networks and inscriptions in the fabrication of accounting images: a study of the representation of three public hospitals. *Accounting, Organizations and Society*, 20(2–3), 111–145.
- Chua, W., & Degeling, P. (1993). Interrogating an accounting-based intervention on three axes: instrumental, moral and aesthetic. *Accounting, Organizations and Society*, 18(4), 291–318.
- Chua, W., & Preston, A. (1994). Worrying about accounting in health care. *Accounting, Auditing and Accountability Journal*, 7(3), 4–17.
- Cochrane, A. (1972). *Effectiveness and efficiency: Random reflections on the health services*. London: Nuffield Provincial Hospitals Trust.
- Cox, A. (1946). The plebiscite. *British Medical Journal*, 2, 707.
- Cruikshank, W. (1946). The scientific method in clinical medicine. *The Lancet*, 1st June.

- Dent, J. (1991). Accounting and organizational cultures: a field study of the emergence of a new organizational reality. *Accounting, Organisations and Society*, 16(8), 705–742.
- DHSS. (1983). *NHS management inquiry*. London: HMSO.
- DoH. (1989). *Working for patients*. London: HMSO.
- DoH. (2002). *Payment by results*. London: HMSO.
- Doll, R. (1998). Controlled Trials: the 1948 watershed. *British Medical Journal*, 317, 1217.
- Dornhorst, A. (1953). Back to front? *The Lancet*, 5th September.
- Espeland, W., & Stevens, M. (1998). Commensuration as a social process. *Annual Review of Sociology*, 24, 313–343.
- Fetter, R., & Freeman, J. (1986). Diagnosis related groups: product line management within hospitals. *Academy of Management Review*, 11(1), 41–54.
- Fisher, R. A. (1925). *Statistical methods for research workers*. Edinburgh: Oliver and Boyd.
- Fletcher, R., Fletcher, S., & Wagner, E. (1982). *Clinical epidemiology – The essentials*. Baltimore: Williams and Wilkins.
- Flynn, R. (2002). Clinical governance and governmentality. *Health, Risk and Society*, 4(2), 155–173.
- Foucault, M. (1973). *The birth of the clinic*. London: Tavistock Publications.
- Foucault, M. (1980). The politics of health in the eighteenth century. In C. Gordon (Ed.), *Power/knowledge*. Hemel Hempstead: Harvester Press.
- Foucault, M. (1991). Governmentality. In G. Burchell, C. Gordon, & P. Miller (Eds.), *The foucault effect: Studies in governmentality*. The University of Chicago Press.
- Fox, T. (1951). Professional freedom. *The Lancet*, 21st July.
- Freidson, E. (1970). *The profession of medicine*. New York: Dodd, Mead and Company.
- Goddard, A. (2010). Contemporary public sector accounting research – an international comparison of journal papers. *British Accounting Review*, 42(2), 75–87.
- Gordon, C. (1980). *Power/knowledge: Selected interviews and other writings*. Brighton: Harvester.
- Guillebaud, C. (1956). *Report of the committee of the enquiry into the cost of the National Health Service*. London: HMSO.
- Harris, J. (1977). The internal organization of hospitals: some economic implications. *Bell Journal of Economics*, 8(2), 467–482.
- Henderson, R. (1955). The climate of discovery. *The Lancet*, 29th October.
- Holden, A., Funnell, W., & Oldroyd, D. (2009). Accounting and the moral economy of illness in Victorian England: the Newcastle Infirmary. *Accounting, Auditing and Accountability Journal*, 16(1), 525–552.
- Hood, C. (1991). A public management for all seasons. *Public Administration*, 69(1), 3–19.
- Hopwood, A. (1984). Accounting and the pursuit of efficiency. In A. Hopwood, & C. Tomkins (Eds.), *Issues in public sector accounting*. Deddington: Philip Allan.
- Hopwood, A., & Tomkins, C. (1984). *Issues in public sector accounting*. Deddington: Philip Allan.
- Hunt, L. (1961). Which road to efficiency? *The Hospitals*. June.
- Jackson, W. (2012). The collectors will call: controlling philanthropy through the annual reports of the Edinburgh Royal Infirmary of Edinburgh. *Accounting History Review*, 22(1), 47–72.
- Jacobs, K. (2005). Hybridisation or polarisation: doctors and accounting in the UK, Germany and Italy. *Financial Accountability and Management*, 21(2), 135–162.
- Jacobs, K., Marcon, G., & Witt, D. (2004). Cost and performance information for doctors: an international comparison. *Management Accounting Research*, 15(3), 337–354.
- Jones, M. (1952). Medical education and medical progress. *British Medical Journal*, 2, 466.
- Jones, C., & Dewing, I. (1997). The attitudes of NHS clinicians and medical managers towards changes in accounting controls. *Financial Accountability and Management*, 13(3), 261–280.
- Jones, M., & Mellett, H. (2007). Determinants of changes in accounting practices: accounting and the UK health service. *Critical Perspectives on Accounting*, 18(1), 91–121.
- Jorgensen, M., & Phillips, L. (2002). *Discourse analysis as theory and method*. London: Sage.
- King's Fund. (1952). *Report on costing investigation for the Ministry of Health*. London: King's Fund.
- Klein, R. (2006). *The new politics of the NHS*. London: Longman.
- Kurunmaki, L. (2004). A hybrid profession – the acquisition of management accounting expertise by medical professionals. *Accounting, Organisations and Society*, 29(3–4), 327–347.
- Kurunmaki, L., Lapsley, I., & Melia, K. (2003). Accountingization v. legitimation: a comparative study of the use of accounting information in intensive care. *Management Accounting Research*, 14(2), 112–139.
- Kurunmaki, L., & Miller, P. (2011). Regulatory hybrids: partnerships, budgeting and modernising government. *Management Accounting Research*, 22(4), 220–241.
- Lapsley, I. (1991). Accounting research in the National Health Service. *Financial Accountability and Management*, 7(1), 1–14.
- Lapsley, I. (1994). Responsibility accounting revived? Market reforms and budgetary control in health care. *Management Accounting Research*, 5(3–4), 337–352.
- Lawrence, C. (1985). Incommunicable knowledge: science, technology and the clinical art in Britain 1850–1914. *Journal of Contemporary History*, 20(4), 503–520.
- Leak, W. (1948a). Treasury control. *British Medical Journal*, 1, 216.
- Leak, W. (1948b). The political perspective. *British Medical Journal*, 1, 514.
- Lees, J. (1962). Figures in medicine. *The Lancet*, 13th January.
- Lewis, T. (1935). The Huxley Lecture on clinical science within the university. *British Medical Journal*, 1, 631.
- Livcock, D. (1950). Functional costing for hospitals on a standard basis. *The Lancet*, 19th August.
- Llewellyn, S., & Northcott, D. (2005). The average hospital. *Accounting, Organisations and Society*, 30(6), 555–583.
- Lowe, A. (2000). Accounting in health care: some evidence on the impact of casemix systems. *British Accounting Review*, 32(2), 189–211.
- Lowe, A., & Doolin, B. (1999). Casemix accounting systems: new spaces for action. *Management Accounting Research*, 10(3), 181–201.
- Matthews, J. (1995). *Quantification and the quest for medical certainty*. Princeton: University Press.
- McLachlan, G. (1952a). Hospital cost accounting. *The Accountant*, 23rd August.
- McLachlan, G. (1952b). Hospital finance and accounts – survey and retrospect. *The Accountant*, 11th October.
- McSweeney, B. (1994). Management by accounting. In A. Hopwood, & P. Miller (Eds.), *Accounting as social and institutional practice*. Cambridge: University Press.
- Medical Research Council. (1948). Streptomycin treatment of pulmonary tuberculosis. *British Medical Journal*, 2, 769.
- Miller, P. (1991). Accounting innovation beyond the enterprise: problematizing investment decisions and programming economic growth in the United Kingdom in the 1960's. *Accounting Organizations and Society*, 16(8), 733–762.
- Miller, P. (1992). Accounting and objectivity: the invention of calculable selves and calculable spaces. *Annals of Scholarship*, 9(1–2), 61–86.
- Miller, P., & O'Leary, T. (1987). Accounting and the construction of the governable person. *Accounting, Organisations and Society*, 12(3), 235–265.
- Miller, P., & Rose, N. (1988). The Tavistock programme: the government of subjectivity and social life. *Sociology*, 22(2), 171–192.
- Miller, P., & Rose, N. (1990). Governing economic life. *Economy and Society*, 19(1), 1–31.
- Miller, P., & Rose, N. (2008). *Governing the present*. Cambridge: Polity Press.
- Millin, G. (1948). Hospital accounting in the National Health Service. *The Hospital*. October.
- MoH. (1920). *Interim report on the future provision of medical and allied services*. London: HMSO.

- MoH. (1944). *A national health service*. London: HMSO.
- MoH. (1955). *Report of the working party set up to devise a system of costing the departments and services of a hospital*. London: HMSO.
- MoH. (1965). *Hospital costing*. London: HMSO.
- Montacute, C. (1962). *Costing and efficiency in hospitals*. London: Oxford University Press.
- Moran, C., Webb-Johnson, A., & Gilliat, W. (1947). Presidents of Royal Colleges and Mr Bevan. *British Medical Journal*, 1, 66.
- Mueller, F., & Carter, C. (2007). We are all managers now: managerialism and professional engineering in UK electricity utilities. *Accounting, Organisations and Society*, 32(1–2), 181–195.
- Nuffield Trust. (1952). *Report of an experiment in hospital costing*. Oxford: University Press.
- Oakes, L., Townley, B., & Cooper, D. (1998). Business plans as pedagogy: Bourdieu and institutional change. *Administrative Science Quarterly*, 42(2), 257–292.
- Ogden, S. (1995). Transforming frameworks of accountability: the case of water privatisation. *Accounting, Organisations and Society*, 20(2–3), 193–218.
- Osborne, T. (1993). On liberalism, neo-liberalism and the liberal profession of medicine. *Economy and Society*, 22(3), 345–356.
- Paine, L. (1967). What is a good hospital? *The Hospital*. January.
- PEP. (1937). *Report on the British health services*. London: Political and Economic Planning.
- Pollitt, C., Harrison, S., Hunter, D., & Marnoch, G. (1988). The reluctant managers: clinicians and budgets in the NHS. *Financial Accountability and Management*, 4(3), 213–233.
- Porter, R. (1999). *The greatest benefit to mankind*. London: Harper Collins.
- Power, M. (1997). *The audit society: Rituals of verification*. Oxford: University Press.
- Preston, A. (1992). The birth of clinical accounting: a study of the emergence and transformations of discourses on the costs and practices of accounting in US hospitals. *Accounting, Organisations and Society*, 17(1), 63–100.
- Preston, A., Cooper, D., & Coombs, R. (1992). Fabricating budgets: a study of the production of management budgeting in the National Health Service. *Accounting, Organisations and Society*, 17(6), 561–593.
- Prior, L. (1988). The architecture of the hospital: a study of spatial organisation and medical knowledge. *British Journal of Sociology*, 39(1), 86–113.
- Rea, D. (1994). Better informed judgement: resource management in the NHS. *Accounting, Auditing and Accountability Journal*, 7(1), 86–110.
- RHBT. (1952). *Hospital cost accounting*. London: Committee of Regional Hospital Board Treasurers.
- Rivett, G. (1998). *From cradle to grave: Fifty years of the NHS*. London: King's Fund.
- Robson, N. (2003). From voluntary to state control and the emergence of the department in UK hospital accounting. *Accounting, Business and Financial History*, 13(2), 99–123.
- Robson, N. (2006). The road to uniformity: accounting change in UK voluntary hospitals 1880–1920. *Accounting and Business Research*, 36(4), 271–288.
- Robson, N. (2007). Adapting not adopting: 1958–74. Accounting and managerial reform in the early NHS. *Accounting, Business and Financial History*, 17(3), 445–467.
- Rose, N., & Miller, P. (1992). Political power beyond the state: problematics of government. *British Journal of Sociology*, 43(2), 173–205.
- Sackett, D., Rosenberg, W., Muir Gray, J., Haynes, R., & Richardson, W. (1996). *Evidence based medicine: How to practice and teach EBM*. Edinburgh: Churchill Livingstone.
- Samuel, S., Dirsmith, M., & McElroy, B. (2005). Monetised medicine: from the physical to the fiscal. *Accounting, Organisations and Society*, 30(3), 249–278.
- Scott, J., McKinnon, J., & Harrison, G. (2003). Cash to accrual and cash to accrual: a case study of financial reporting in two NSW hospitals 1857 to post-1975. *Accounting, Auditing and Accountability Journal*, 16(1), 104–140.
- Sherren, D. (1952). Hospital cost accounting. *The Accountant*, 13th December.
- Spectator. (1958). Sauce for the gander. *The Hospital*. December.
- The Accountant. (1946). Hospital accounts: the need for revision. *The Accountant*, 15th August.
- The Accountant. (1948). Hospital accounting. *The Accountant*, 7th August.
- The Accountant. (1949). Hospital finance and accounts. *The Accountant*, 20th August.
- The Accountant. (1952). Hospital cost accounting. *The Accountant*, 6th December.
- The Accountant. (1957). Official hospital costing system. *The Accountant*, 30th March.
- The Hospital. (1952). Hospital costing. *The Hospital*. July.
- The Hospital. (1967). Management accounting. *The Hospital*. December.
- The Lancet. (1946). Clinician and Scientist. *The Lancet*, 5th January.
- The Lancet. (1952). Hospital costs. *The Lancet*, 20th December.
- Thomson, A. (1958). Reflections on medical practice. *British Medical Journal*, 2, 119.
- Trillwood, W. (1956). A new approach to hospital costing. *The Hospital*. January.
- Trotter, W. (1935). General ideas in medicine. *British Medical Journal*, 2, 609.
- Weisz, G. (2005). From clinical counting to evidence-based medicine. In G. Jorland, A. Opinel, & G. Weisz (Eds.), *Body counts: Medical quantification in historical and sociological perspective*. Montreal: McGill-Queen's University Press.
- Whitby, L. (1951). The science and art of medicine. *The Lancet*, 28th July.