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# Public value and pricing in English hospitals: Value creation or value extraction?

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## Abstract

Value creation happens when hospitals provide new services or clinicians deliver existing services in better or more cost-efficient ways. On the other hand, those who deliver healthcare can extract financial value from the system. Cost-based prices are now potent measures of financial value for profit centres in English hospitals. Here, we focus on the ramifications of these cost-based prices for creating or extracting value in the health care system.

Our empirical data is drawn from: first, semi-structured interviews with Clinical Directors who head up profit centres in English hospitals; and second, documentary sources which reveal how accounting drives costing for health treatments. From these data sources we identify three valuing activities which mobilise cost-based prices: “bubble” charts; “up-coding” and business cases in the context of a joint venture.

We conclude that cost-based pricing can create public value because it incentivizes clinical activity and can be used to enhance health care quality. But the traditional accounting mode for cost-based pricing advantages standardised care while disadvantaging complex care, this generates opportunities for value extraction for those, including some private sector providers, who deliver standardised care. Our analysis encompasses three different levels: the profit centre based on a specialty, the hospital and the entire health care system. This broad appraisal reveals that value creation at the level of the individual profit centre can become value extraction for the hospital and the health care system as a whole.

**Key words:** healthcare; value creation; value extraction; valuing; price; privatization.

## 1. Introduction

Those who deliver healthcare can use cost-based prices to create or extract value from the healthcare system. Against this background, Mazzucato (2018, p.6) suggests we should focus on these *processes* of value creation and value extraction, where the former is understood as the mobilisation of resources (labour, capital, research and intangibles) to produce, or better configure, goods or services and the latter as monetary gains made from trading in existing goods and services. The distinction, in turn, rests on a presumption of difference between productive and unproductive activities or, more basically, between value making and value-taking. She challenges the current political status quo which views trading in existing goods and services as productive, where trading prices create value. Instead, she invites us to consider when financial transactions, recorded through accounting, are value extraction through monetary gains. She stresses the value creation-value extraction dichotomy should not be seen as a stark divide, rather as a point of departure for exploring complex issues around prices, profits and the distribution of goods, services and financial gains.

Mazzucato (2018, p.7) argues that Classical Economics deemed value as objective: the value of a good or service had to be objectively established (according to mobilised resources under

specific conditions) before a price could be determined. She remarks this thinking then went into reverse: the value of a good or service became the price paid in the market, whatever the purchaser is willing to pay. Values became equal to market prices, making the market a source of value creation. This formulation neglects any distinction between unproductive and productive activities: trading in existing goods and services creates just as much value as producing new goods and services.

We apply Mazzucato's ideas to healthcare, where markets, underpinned by cost-based prices, exist within hospitals. We explore the dynamics of value creation and extraction through cost-based pricing in the English NHS, which is tax-funded and free at the point of delivery. Hence, public value is central to any assessment of value in English healthcare. Our contribution lies in two areas: first, to trace how cost-based pricing provokes shifts in public value and professional, medical values and fosters privatization; and, second, through Mazzucato, to theorize how cost-based pricing drives either value creation or value extraction.

For the healthcare system, value can be created or extracted at different levels: the medical specialty; the hospital; or the whole healthcare sector. Value is a complex and contested concept. We deal, primarily, with the dynamics between public value, professional medical values and financial value- as calculated through cost-based prices. Cost-based prices form the basis for healthcare funding and, hence, financial value for medical specialties and hospitals. We trace how financial value, created by cost-based prices, impacts on the professional values and valuing activities of senior doctors with financial responsibilities in hospitals and, consequently, on the public value of hospitals for the wider health system.

In the next section, we define public value in the context of professional values and valuing activities because whether cost-based prices engender value creation or value extraction will depend upon how professional, medical values and valuing activities shift in response to the new cost-based pricing regime.

## **2. Public value, prices, values and valuing activities**

To begin a discussion on value creation and extraction we focus, first, on value. In our context, this is *public* value. Prior discussions on public value have been largely normative with scant empirical research (Bozeman 2007; Benington 2009; Williams and Shearer, 2010). In economics, the concept of public value does not exist, all value is thought to be created in the private sector (Mazzucato, 2018, p.230). Specifically, in neoclassical economics, value is thought to be created through spontaneous order in exchange, and is frequently synonymous with price (Hayek, 1932; Hayek, 1948; Mirowski, 1990; Fourcade, 2011; Marquand, 2014).

Discussions about value are inherently political (Mazzucato, 2018, p.14), likewise definitions of public value are politicised, often reflecting vested interests. Mazzucato's work enables us to see both the broader political-economic consequences of locally situated valuation activities and their impact on the assessment of public value for the healthcare system as a whole. What is public value?

### **2.1 Public value, values and prices**

Moore (1995, pp. 28-30) is credited with the first work on public value, claiming the public sector should produce public value in an analogous way to that in which the private sector creates private value, which he assumes is demonstrated through prices whenever the public will pay more for goods than the costs of production. Clearly, the value of healthcare to sick

individuals is high. So, in an unfettered market, prices would be high, even prohibitive- to the extent that people could and would pay. The UK government has high control of both NHS provision and funding; the latter is, largely, through taxation. In consequence, financial value (in the sense of value for money) is an aspect of public value for tax-paying citizens. But public value in English healthcare cannot be created through the purchasing choices of consumers in a market. In consequence, Moore's claim does not hold. So how is public value created?

Wensley and Moore (2010, p.127) interpret "*public value creation as the production of benefits which cannot be captured within the market-based pricing system*". But what are these benefits? And who gains from them? Williams and Shearer (2010) argue public value should reflect the priorities of populations. Also, public value implies consideration for the longer term and future generations of citizens (Benington, 2009). Such formulations imply that public value creation reflects the needs of collectivities. Similarly, Meynhardt (2008) equates public value with the common good or common welfare. Still, what creates common welfare?

Maesschalck (2004) argues for a unique set of public values to serve common welfare. New (1999, p.ii) states "*Public values are conceptions of the morally desirable, in the realm of state activity*", arguing that morality is always inherent in public values which can never reduce to simple, individual preferences. In consequence, public value can only be assessed in the context of espoused public values. Marquand (2004, pp.27-28) suggests "citizenship", "equity" and "service to the community", where need rather than access to money is the basis for the distribution of goods and services. Espoused NHS public values are: equity, choice, universalism, efficiency, public service, democracy, respect for human dignity and health (Mahdon, 2006).

Moore (1995, p.53) contends that value creation requires governments to connect with what the public value. This concept of public value creation requires a well-informed, motivated public, capable of engaging in democratic debate (Benington, 2009). What do the public value? Citizens can derive public value from due process and distributional equity, where the interests of others, rather than themselves, are at stake (Kelly et al., 2002). Yet, in an era characterised by public disillusionment, even disgust, with politics, many citizens are in retreat from public dialogue (Gregory, 1997; Boggs, 2001). If the public does not express views on value, governments cannot connect with them. In the absence of the public's input, value can be seen as '*public*' if, over and above being defined as such, governments need to intervene to ensure it (Zuiderent-Jerak et al., 2015). This implies governments can fail to achieve public value either by not intervening or by their interventions being ineffective (Kelly et al., 2002).

Mazzucato (2018, pp.10, 18) argues that the government's role in creating public value is underestimated. Rather than being consigned to intervening over market failures, governments should actively co-create and shape markets to ensure public value (Laplaine & Mazzucato, 2020). She also points out that governments create public value through tax-funded investments (Mazzucato, 2018, p.263). For example, government investment in health care ensures fitness and well-being, an educated workforce and drives large scale technological change but such public value is not recognized and, therefore, not accounted for, in GDP. Rather productive investment government spending is seen only as expenditure (Mazzucato, 2018, p.264).

The government is not the only group to create public value. Moore (1995) argues that middle managers in public sector organizations influence public value and values. In our context, these middle managers are senior clinicians, their professional values drive their concepts of

public value and their responses to cost-based pricing which, in turn, influence the balance between value creation and value extraction. To see whether cost-based pricing fosters value extraction we need to understand professional, medical values.

## **2.2 Professional, medical values**

Professional values guide the actions of any occupational group, shaping its identity, beliefs and assumptions (Frankel, 1989; Hunter, 2008; Moyo et al., 2016) which, then, drive what is valued and how valuing proceeds.

The defining dimensions of traditional professionalism include an intellectually sophisticated knowledge base, the individual mastery of practice or, in other words, the production process, and an identity formed around a strong commitment to public values (Freidson, 1988; Sullivan, 2005; Cruess et al., 2016). Historically, professional medical values have derived from and been clustered around these dimensions.

Medical specialties have had unequal claims to these defining dimensions of professionalism. Intellectual sophistication and the opportunity to demonstrate individual practical mastery of production depend on access to what Schön (1988, p.67) termed the “*high, hard ground... of research-based theory and technique*”. Surgery has occupied this productive high ground (Hinze, 1999; Srivastava, 2013) whilst psychiatry, for example, is still in the “*swampy lowland...[of] confusing ‘messes’*” (Schön, 1988, p.67). Medical school ‘banter’ dubs psychiatrists as ‘pest controllers’ (Baker et al., 2016). Consequently, ranking to produce hierarchy is embedded in medical culture; hierarchy is also a prime professional value (Srivastava, 2013; Baker et al., 2016).

Pride and feelings of competence in producing medical care are understood as core values (Marquand, 2004); these derive from intellectual prowess and practical mastery of the production process. Work autonomy, professional authority and territorial protectionism (Freidson, 1974; Starr, 1982; Freidson, 1988; Klein, 1995) are also values which the elite specialties, in particular, strive to maintain.

So, traditionally, medical values originated in clinical work, or, in other words, are associated with the production of medical care and clinical knowledge. Disparate production processes and unequal claims to research-based knowledge make for medical hierarchies but these are still tied to the production of clinical *modus operandi*. But, over time, consequent upon governmental valuations and, to some extent, patient values, the active production and reproduction of hierarchy, authority and autonomy slowed down as the values of open communication and collaboration (Srivastava, 2013), both within the clinician-patient relationship and between clinicians, rose to ascendancy. Healthcare organizations now actively promote the values of teamwork, partnership, solidarity, transparency, communication and collaboration to address care quality and patient safety issues (Greene et al., 2009; Cunningham et al., 2011; Epstein and Street, 2011). The shifting of medical values towards more collective and less individualistic forms creates more alignment with the common welfare understanding of public value.

But, in terms of Mazzucato’s distinction between value creation and value extraction, which rests on the notion of productive and unproductive (e.g. unearned income and trading) activities, the values of the medical profession still appeared firmly based on the production process rather than financial value. As an expression of commitment to public values, professionals have ‘policed’ the frontier between their work and that of the private sector (Marquand, 2004, p.54). The public value of professionalism relied on professionals defending

their territory against a sole focus on financial value- as manifest in a profitable bottom line (Sullivan, 1995).

However, the advent of market-based reforms and the growing commercialization and financialization of healthcare (Hunter, 2008, pp.91-118; Klein, 2006, pp.252-255) affords the possibility of value extraction through trading, not least by positioning financial value as a concern for clinicians (Jacobs, 2005; Jones and Mellett, 2007; Malmlose, 2015). A heightened concern with financial value and trading, allied with a shift away from a sole focus on the values associated with the clinical production would constitute a change in “value patterns” (Peda & Vinnari, 2020). Value patterns are modified through valuing activities, we explore these active processes next.

### **2.3 Valuing activities**

Writing from an economic perspective, Mazzucato and Roy (2019) argue that deliberation amongst multiple actors creates value. Collective endeavours create public value (Mazzucato, 2018, p.265), in healthcare these endeavours include locally situated valuing activities. Similarly, economic sociologists stress the composition of value and values in practice-through valuing activities (Callon, 2007; Garcia-Parpet, 2007; Zuiderent-Jerak, 2009). Hence, values are never ‘unaccompanied’- they manifest in action (Van der Wal et al., 2008) and ‘making things valuable’ (Kornberger et al., 2015) takes place through socio-economic processes. Doganova et al. (2014, p.87) speak of valuation processes whenever “*the value or values of something are established, assessed, negotiated, provoked, maintained, constructed and/or contested*”.

Valuations draw upon dominant narratives or framings, organizational practices and calculating devices (Beunza and Stark 2004; Smith 2007). For example, with respect to calculation, Ellwood and Greenwood (2016) point out that how we measure items can affect how we value them. Zuiderent-Jerak and van Egmond (2015) identify ‘devices of valuation’ and ‘valuation cultures’, where sociological framings place more emphasis on the latter and more materially oriented analyses on the former. For example, cultural and professional norms produce certain values for individuals whilst ensuring that other values tend not to enter their consciousness and so cannot be assessed (Hofstede, 1980; Archer, 1996; Hofstede, 2001). Equally, valuation devices like graphs, matrices and diagrams, define and channel how readers think, making it easier for them to assimilate and arrive at some evaluative conclusions or decisions rather than others (Cabantous et al., 2010; Pollock and Campagnolo, 2015).

In the empirical sections, we focus on the locally situated valuing activities of middle managers (Clinical Directors) in the NHS, we investigate whether these activities create or extract public value. Next, we set out the significant background to these valuing activities- the introduction of cost-based pricing and profit centres.

## **3. Background**

Our empirical focus is, primarily, on the valuing activities of Clinical Directors in English hospitals. Clinical Directors occupy hybrid medical-manager roles with both professional and financial responsibilities. For reasons we explain in this section, their locally situated valuing activities assumed much greater significance in the context of cost-based healthcare pricing. Also a key political intervention, to create profit centres in hospitals (see below) created an authoritative context for this cost-based product pricing technology.

### 3.1 Introducing cost-based pricing to hospitals

In terms of the impact of cost-based pricing, there were four pre-existing, facilitating circumstances.

First, clinical directorates were introduced during the 'quasi-market' reforms of the early 1990s. Prior to this, experiments in clinical budgeting took place (Wickings et al, 1983). Clinical Directors head up directorates as semi-autonomous, self-managed units within the hospital. This freedom was coupled with financial accountability for the directorate budget (Ezzamel and Willmott 1993; Llewellyn, 2001). Clinical Directors have had cost reporting responsibilities since the introduction of clinical directorates, after which time their work became more managerial in nature (Kitchener, 2000; Walshe and Smith, 2011). Directorates were organized around medical specialties (like orthopaedics) or service departments (like pathology).

Second, since the early 1990s, the NHS has assumed a quasi-market arrangement, being split into purchasers and providers. The former were, originally, either bureaucratic bodies or General Practitioners (family doctors), while the latter were, primarily, hospitals (Turner and Powell, 2016). From 2013, purchasers, now groups of General Practitioners, were renamed as commissioners and their remit extended to assessing the healthcare needs of local populations (NHS England, 2017).

Third, from the mid-1990s, healthcare interventions have been classified and grouped into what are, essentially, product lines: Health Resource Groups (HRGs). The economic regulator, termed 'Monitor'<sup>1</sup> in England, states "*HRGs are clinically meaningful groups of diagnoses and treatments that may typically occur during a spell of care, and use similar levels of resources*" (NHS England and NHS Improvement, 2016, p.13). HRGs are variants of Diagnostic Related Groups (DRGs). First introduced in the US in the 1980s, DRGs transformed healthcare services into commodities which were profitable whenever production costs were less than the price paid, offering the possibility of competitively advantageous product lines (Samuel et al., 2005).

Fourth, since 2003, there have been prices for HRG-based healthcare product lines. Although these prices are cost-based, the price (often called the 'tariff' in the NHS) paid to a hospital is set at the national average HRG cost. A funding system termed 'Payment by Results' (PbR) was progressively rolled out to pay for healthcare activity through HRGs (Department of Health, 2005). Stark (2009) notes payment systems usually recognise results as well as reward them. But despite the nomenclature of 'Payment for *Results*', these prices did not recognise and pay for value in terms of health outcomes, patient safety, patient-reported satisfaction or any other non-economic aspect of value<sup>2</sup>. Rather PbR pays for volume (price x activity), a system which accords with economic theories of value. For example, Mirowski (1990) notes that in Debreu's (1959) Theory of Value, value was only ever defined as "*price x quantity*". These HRG product lines attract differential prices. Formally, prices are dependent

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<sup>1</sup> In July 2015 Monitor merged with the Trust Development Authority (TDA) to formally become 'NHS Improvement' but recent documents on the 2016/17 tariff proposals still refer to 'Monitor'. To avoid confusion we refer to the "economic regulator" in this article. In some cases, the economic regulator works with an organization called NHS England, this is made explicit in the references but not in the text to avoid unduly complex nomenclature.

<sup>2</sup> In 2010/11 the English Department of Health did introduce a Best Practice Tariff (BPT) scheme intended to financially reward best practice processes. This scheme began with four tariffs, adding a further nine later. McDonald et al (2013) conducted an early evaluation of the first four tariffs, concluding that the scheme offered modest benefits in terms of compliance with protocols.

upon the procedures undertaken, the number and complexity of the diagnoses made, and the health status of the patient but, predominantly, prices are simply based on the national average cost for the particular healthcare intervention (i.e. hospitals are not reimbursed at their actual costs). The government's argument is that price-setting on the basis of the average HRG cost incentivizes cost efficiencies since, if the tariff price exceeds HRG cost, hospitals make a surplus which they can retain; conversely, if the price is lower than cost, they lose money on the particular HRG (Street and Maynard, 2007).

Notably, and most significantly in terms of understanding the impact of HRG costing on professional values and public value, there is a traditional approach to overhead cost allocation; such modes tend to over-cost routine, non-complex products or services but under-cost complex products or services (cf. Bruns and Kaplan, 1987; Cooper and Kaplan, 1988; Drury, 2003: p274). In consequence, English cost-based pricing makes standardised work more financially lucrative whilst raising issues for the sustainability of complex healthcare, which tends to lose money.

In the future, when setting prices, the economic regulator has signalled their intent to focus on the cost of the patient (rather than an HRG), to "*open up opportunities for more sophisticated methods of price setting... Our long term vision is to move towards using the cost of treating each patient, rather than the average cost, as the main source of cost data informing how we regulate prices*" (Monitor, 2012, pp.3-4). These more 'sophisticated' prices may enable providers, both NHS and for-profit, to better identify competitively advantageous health product lines.

### **3.2 Creating profit centres in hospitals**

Despite the development of product lines which attract prices, when Clinical Directors had cost responsibilities only, the cost-based prices within their specialties would have been of limited interest and impact. This changed when the economic regulator created profit centres (Monitor, 2006) whose leaders vie for finite resources, status and career progression (Ghosh, 2000, p.664). The pre-existing clinical directorates provided a reporting platform for profit centres, of which there can be 10-20, dependent on the size of the hospital (HFMA, 2009). Clinicians have always competed to secure resources for their specialties, sometimes through emotive rhetoric and so-called 'shroud-waving' (Maynard, 1988; Rawles, 1989; Burns and Priebe, 1999). When harnessed to a health product pricing technology, profit centre status may intensify these competitive drives because profitability can be portrayed as evidence of worth. For Clinical Directors, the main advantages of cost-based prices are: first, access to any profits accruing to the directorate; and, second, using price-based profitability as a signal of financial value when constructing business cases for new investment monies (Bury et al., 2007; Begkos et al., 2019).

The economic regulator worked closely with McKinsey, the international management consultancy, to develop profit centres in hospitals (Rose, 2012). McKinsey's clients have included 15 of the 22 largest healthcare and pharmaceutical companies (Bloomberg Businessweek, 2002). The economic regulator's promotion of profit centres and competition may facilitate private sector access to the UK healthcare market. Staff from KPMG, Deloitte and PwC are also on the economic regulator's Executive team (Lawson, 2013) these firms also benefit directly, 2012-13 figures show the economic regulator spent 40% of its NHS budget on management consultancy fees (Healey, 2013). The Chairman of the Royal College of General Practitioners raised concerns over 'conflicts of interest', commenting that private



companies who acted as government advisers over dismantling the previous system stand to gain commercially from the new regime (Rose, 2012).

Under the label of Service Line Reporting (SLR), each of a hospital's specialties (e.g. orthopaedics) and support departments (e.g. pathology) become profit centres whose profitability is measured and reported. The economic regulator comments on the 'natural' benefits of financial independence for specialties, "*In business terms, the service line is the natural "business unit" of the hospital - a distinct unit with identifiable customers, products, revenues and costs that is run as an independent business with its own income and expenditure*" (Monitor, 2006, p.1). This definition emphasises equivalence to private sector practice, since "*Service lines are...[the] equivalent of a commercial company's business streams*" (Monitor, 2009, p.2).

Traditionally, large acute hospitals have maintained a full portfolio of services. But, after the introduction of profit centres, whether hospitals support loss-making activities may depend, at least in part, on how they are valued by hospital managers and the Clinical Directors of other, more profitable specialties.

In sum, profit centres developed from clinical directorates or specialties- which were long-standing organizational groupings commanding the allegiance of clinicians. Accounting generates prices for health product lines, Fourcade (2011), argues the ultimate aim of such pricing technologies is to strengthen the authority and legitimacy of the market imperative where price and value can be taken to be one and the same. As the prices are cost-based, this favours directorates which undertake more standardised procedures since their work becomes more profitable than those who deliver complex care. Also, the Clinical Directors of specialties with more standardised procedures will be able to present a stronger case for investment in their directorates based on their value.

Against the background of profit centre status, the empirical sections focus on both value and price, as mobilised in the valuing activities of Clinical Directors when they compete to secure resources for their specialties. We analyse the value creation and value extraction implications. But, first, the next section presents our methodology.

## **4. Research methods and methodology**

The empirical data was gathered for a research study funded by the National Institute for Health Research, undertaken between July 2012 and October 2015, including four case studies of hospitals at different geographical locations. The Research Fellow on the study did a topic-related PhD, which investigated a fifth case study. This paper draws on data from four of these case studies, anonymised here as Alpha, Beta, Gamma and Delta. Our research design (see below) encompassed semi-structured interviews to identify meanings and collating multiple accounting documents to record the practical activity of valuation.

### **4.1 Research Design**

Case study research is well-developed in the study of organisations (Scapens, 1990; Yin, 1991; Llewellyn, 1992). This 'strategy of enquiry' aims for a holistic understanding of specific phenomena- processes, activities or events (Stake, 1995). An emphasis on context renders case studies particularly significant for evaluating the impact of policy initiatives (Bryman, 2003).

At each of the case study sites, the duration of the interviews was 60-90 minutes; they were audio-recorded and transcribed as Microsoft Word documents. In one instance, consent for audio recording was withheld and hand written notes taken instead. The interviewees included 26 Clinical Directors,<sup>3</sup> 9 Business Managers (located in the Clinical Directorates), 2 Medical Directors, 3 Directors of Finance, 3 Deputy Directors of Finance, one Finance Manager and 2 Chief Executives (46 in total).

We gathered 25 documentary sources including: service line reports with 'bubble charts', business cases for investment, presentations on Patient Level Information and Costing Systems (PLICS), briefing papers and strategy documents used in discussions at Board level.

## **4.2 Data Analysis**

The interview transcripts for all four case study sites were collated and reviewed by the team member who had led on the case study. A sample of six transcripts were analysed through an initial 'hand-coding' exercise where content was organised into themes. Using this method the team generated a draft theme-code template which was used iteratively to allow for flexibility to develop the coding exercise as each new transcript was analysed. On completion of all hand coding, the dataset was imported into the qualitative data analysis software package NVivo which generated codes, segmented text and filtered the data, to describe, label and group together different themes. The use of NVivo enhanced our ability to "*sort, sift, search and think through the identifiable patterns as well as idiosyncrasies*" in our dataset (Lu and Shulman, 2008, p.105).

Not all themes identified in the research study are germane to this paper, of relevance are: NHS reforms, the economic regulator, the price tariff, profit centres/service line reporting and management, financial performance review, patient cost variability, business development/joint ventures, any qualified providers/threats and opportunities, private patients, investment/disinvestment/business cases and coding for a result/up-coding.

## **5. Valuing activities: value creation or value extraction?**

In the next three empirical sections, we focus on how, within specialties, cost-based prices differentially impact on the financial value of different medical specialties, now constituted as profit centres. We trace the implications for value creation and value extraction in each of the cases.

### **5.1 Valuing Activity 1: Ranking value through bubble charts**

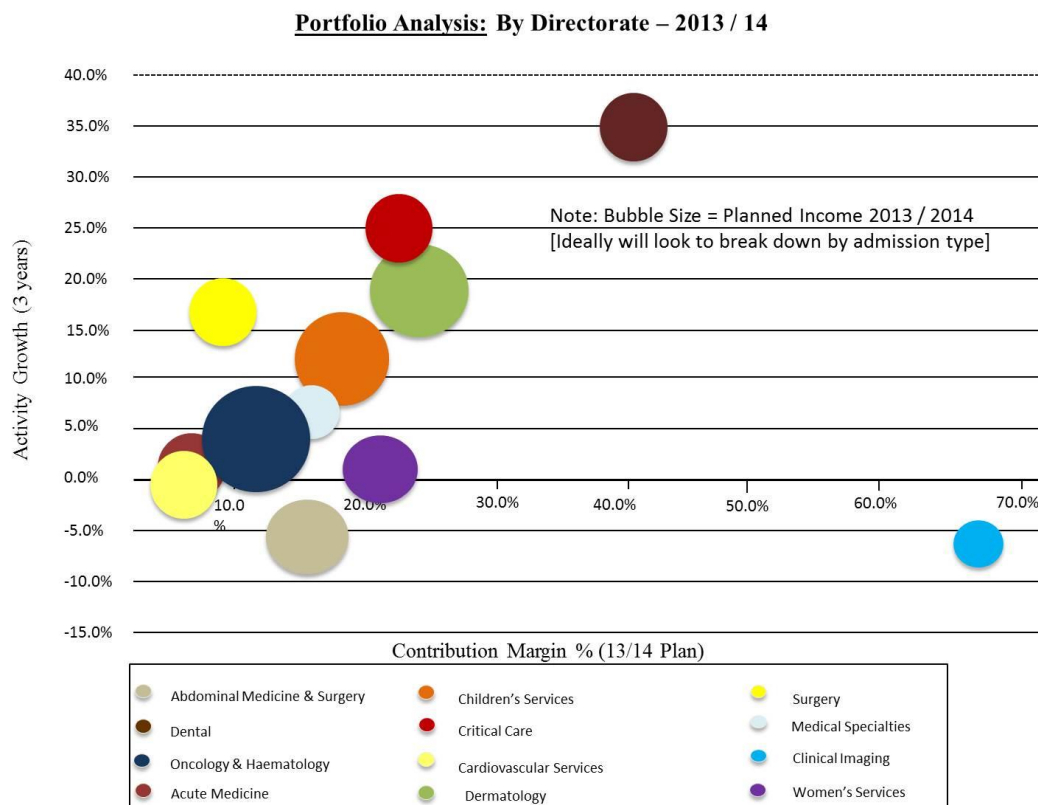
In this first valuing activity, we focus on a calculative valuation device, a bubble chart, which compares and ranks the overall financial value of service lines (e.g. surgery, acute medicine and dermatology) through portraying 'bubbles' of disparate size and position.

On these charts, planned income for a specialty is visualized through bubble size. The location of the bubble on the chart is dictated by % activity growth on the Y axis and % contribution margin on the X axis, as depicted in figure 1 below.

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<sup>3</sup> The term 'Clinical Director' was not consistent across all specialties at Gamma and Delta because some use the terms Clinical Lead, Head of Programme and Director of Care. To avoid confusion, we retained the Clinical Director term throughout because the consultants involved had the similar levels of seniority and organizational, including profit centre, responsibilities across the four case studies.

**Figure 1:** Comparing the financial value of specialties (or service lines) through bubble charts



Source: *Financial Report, 2-5 year planning, December 2013, Beta.*

### 5.1.1 Bubble charts and value creation

Bubble charts, as evaluative devices which portray and rank financial value, promote the rationale of competitive profit centres which can both reduce costs and increase income. In terms of the latter, if the price tariff is advantageous, undertaking additional activity will boost income but if the price does not cover costs, it will only augment the loss. Consequently, profitable specialties are clearly incentivised to undertake more activity. Activity-based funding systems are associated with activity growth in hospitals (Farrar, 2009; O'Reilly, 2012). More activity means more clinical procedures and services which create value (Mazzucato, 2018, p.7).

In terms of the production function (Mazzucato, 2018, p.232), the cost of inputs is more than covered for profitable services hence, for them, PbR and profit centres enable value production. Also, establishing value is a driver for action because, once value is established, actions make sense within a larger system of meaning (Graeber, 2001). Here, the Clinical Director for Trauma and Orthopaedics at Alpha emphasises how to act to emulate the high value specialties (i.e. act to grow your bubble and move it up the chart). Quintessentially, bubbles are physical, visual phenomena which inevitably rise, promoting the notion that moving up the chart may be readily accomplished.

*“So a bubble chart, each [coloured] circle represents a specialty and [...] your position represents your improvement or failure. So the size of the bubble is your business and your position around the line is profitability or failure... it's about growing your bubble and moving it up the chart... And it just makes it very understandable... The power of this is that it helps a clinician understand – it helps them to see – realise their improvement.” (CD2-A)*

But this optimistic picture ignores the position of the loss-making specialities and tariff inequities.

### **5.1.2 Bubble charts, price tariff inequities and value extraction**

As discussed earlier, under the price tariff, generally, specialities which undertake more routine, standardized procedures tend to enjoy more advantageous tariffs than specialities where the work is complex and unpredictable with, frequently, acutely unwell patients with co-morbidities<sup>4</sup>. This differential between standardized and complex, maps, albeit approximately, on to elective (i.e. scheduled in advance, non-urgent) and non-elective activities. Within hospital finance offices, these price inequities are known and understood, as the Assistant Finance Director at Beta commented.

*“So fundamentally what we’re [the NHS] is doing is we’re over-costing our elective and non-complex activity and under-costing our non-elective and more complex activity and ...that means the tariff is too high for elective activity and too low for non-elective activity.” (F2-B)*

On the bubble chart, the consequences of the tariff advantage for standardized, non-complex, care is clearly seen for the outliers: dental services (dark brown bubble on 35% activity growth) and clinical imaging (blue bubble on 67% contribution). This tariff advantage for standardised work is purely an artefact of the funding system. It can, therefore be seen as unearned income (Mazzucato, 2018, p.9), a form of value extraction.

Despite price tariff inequities being common knowledge to those with financial expertise, they are imperfectly understood by Clinical Directors. Significantly, bubble charts do not acknowledge them, hence value extraction is not considered. At least in part, this stems from Finance staff wanting to avoid clinicians mobilising a ‘tariff disadvantage’ as an excuse for not making cost savings. The Costing and Income Manager at Gamma argues:

*“A difficulty I have when I talk to clinicians [is] it’s very easy for a clinician to say...the tariff isn’t right...There are tariff elements to this, but there’s also efficiency savings that you can make and it’s trying not to detract from [them].” (F2-G)*

Finance personnel are eager to communicate with clinicians. Currently, inducing clinical engagement with the finance function is a prime motivation for senior managers in hospitals (Llewellyn et al., 2016) but a focus on tariff inequities may ‘muddy the waters’ and detract from encouraging clinicians to make cost savings. To present clear messages to recipients, graphical representation often simplifies, with associated loss of relevant knowledge (Quattrone, 2009). Using bubble charts to rank service lines is a clear message from finance to clinicians. But this simple evaluative context facilitates convergence, in the minds of clinicians, between the price a service line receives for a clinical activity and its financial value. More than this, bubble charts rank specialities. As discussed earlier, in medicine, professional values render comparative value ranking acceptable, even standard practice.

### **5.1.3 Bubble charts align professional values with financial value**

The Deputy Finance Director at Beta comments on how bubble charts instantly distinguish the financially high value, ‘attractive’ specialities as against the lower value ones. In his/her view,

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<sup>4</sup> Co-morbidities indicate the presence of one or more additional diseases, over and above the primary one.

this value ranking is on the basis of income, demonstrating the shift that Mazzucato (2018, p.xviii) points to where earnings become evidence of value creation.

*“So what they’re [bubble charts] saying here is, which specialties, or types of work are attractive in terms of their contribution, and which are loss making? So it says surgery [yellow and positioned about 10% contribution margin, 15-20% activity growth in the chart above] is [a] relatively small [bubble] in income terms... Contributions appear to be relatively low compared to other specialties, [particularly] a couple of bubbles.” (F2-B)*

As discussed earlier, traditional professional values emphasise pride in technical competence and mastery over the production process but, here, the Clinical Director notes that orthopaedic clinicians’ pride in their work had become aligned with its financial value on the bubble chart.

*“One of the strategic advisors to the organisation said, “The trouble with orthopaedics is that it’s a bad dog, and once you’ve got a bad dog, you’ve always got a bad dog.” And [the orthopaedic clinicians] got used to being the bad dog- in terms of mind-set. And actually, showing them that they were getting better [on the bubble chart] that information – you know, [makes you] proud of what you do.” (CD2-A)*

Bubble charts resemble the BCG (Boston Consulting Group) matrix<sup>5</sup> in function, i.e. to evaluate the relative financial value of ‘product lines’ through bubbles. Notably, the BCG matrix identifies, inter alia, the metonymy of ‘dogs’ (cf. Lakoff and Johnston, 1980), failures which have a low market share in a slow-growing market. The BCG matrix also designates the metonymy of ‘stars’ which require investment to maintain their ascendant growth rates. Dental Services was one of the few specialties at Beta which had growth rates at above 10% (Financial Report, 2-5 year planning, December 2013, Beta). The Clinical Director of Dental Services (dark brown bubble at the top right of the chart) clearly sees his specialty as a valued ‘star’ but bemoans that he has to ‘beg’ for investment in new appointments.

*“They [the finance office] told me “Well done because you take it [contribution] seriously”. Well, what are the rest of the directorates doing? If we want another consultant, we have to beg... Our directorate has 4% of the budget but contributes 50% to the Trust’s surplus. While we make money, others don’t, it’s a balancing act... acute medicine [brown bubble behind the pale yellow on the X axis] is never going to make money.” (CD3-B)<sup>6</sup>*

Along with acute medicine, surgery (bright yellow bubble), could improve its bubble chart position by not taking complex cases. A business manager at Beta comments on revision surgery.

*“If you do this on a purely financial perspective, you would be saying we won’t do revision joint replacements because they can be incredibly costly. So we’ll just do the primary, which is, you know, the relatively straightforward, orthopaedic services the private sector do... If you’re a world-renowned teaching hospital and a centre of excellence — you can’t just do that.” (M1-B)*

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<sup>5</sup> The BCG matrix maps the value of the company’s product lines based on their relative market share and growth rate, distinguishing between cash cows (high market share in a slow-growing market), stars (high market share in fast-growing market), dogs (low market share in a slow-growing market) and question marks (low market share in fast-growing market).

<sup>6</sup> This respondent refused interview recording, this quote is from notes taken at the time.

Here professional values of competence and pride, at being a production centre of excellence, support the public value of undertaking complex work which also expands the technical boundaries of surgery.

Moreover, as the next section shows, some hospitals uphold the public value of comprehensiveness through maintaining a full portfolio of specialities to provide the medical procedures and services which meet the needs of the local population and the wider public.

#### **5.1.4 Competing professional values support cross-subsidization and redistribution**

Value creation always raises the question of distribution- of who should benefit from this value (Mazzucato, 2018, p.271). As the NHS funding system rewards standardised services more than complex ones, essentially standardised services benefit from some unearned income, making them value-takers, in Mazzucato's terms. Although bubble charts, as the previous section shows, can rank according to income, evaluative devices can recognise different principles and values (Chenhall et al., 2013). These competing values give rise to different action logics (Greenwood et al., 2010; Ezzamel et al., 2012; Carlsson-Wall et al., 2016) and different narratives. Along with solidarity or shared responsibility, partnership is promoted as a core professional value within healthcare (Epstein and Street 2011; Zuiderent-Jerak and van Egmond, 2015) as traditional individualistic values, at least partially, shift to more collective ones.

These professional values underpin action in a narrative to cross-subsidize - to redistribute. From a position with no allegiance to any particular specialty, the Medical Director<sup>7</sup> at Beta comments on advantageous tariff prices for some specialties:

*"I've always understood that you have to cross-subsidise; we don't run separate clinical businesses... So [we] have a differential contribution margin for the directorates where the tariff income is advantageous, so to make their contribution bigger and make others [loss-making specialties] smaller... effectively, tax more... [but] I prefer to use, I prefer the term contribution margin... [to] taxation."* (MD-B)

In the above quote the Medical Director distances himself from private sector values and the identification of clinical directorates as 'independent businesses' (Monitor, 2008). He emphasizes the accounting term 'contribution' rather than 'taxation'. This reinforces the public value of contributing to the hospital as a whole, presumably to try to ensure that re-distribution is more readily accepted by the specialties which are advantaged by the price tariff.

A Business Manager in a specialty at an advantage under the price tariff is very cognizant of their ability to "bring the money in" but still accepts the requirement for redistribution to maintain comprehensive provision of services:

*"We [Neurosurgery] are acutely aware that we bring the money in and it's Neuro and Renal that have to generate the money to make sure the other services can continue... general surgery makes a whacking great loss<sup>8</sup>, but as a hospital, we need to be able offer general surgery."* (M1-A)

The decision to redistribute can render the ranking of financial value a means to decide on the extent of subsidy from the specialties which generate surpluses rather than a tool for spotting investment opportunities. A Business Manager at Delta frankly asserts that specialties in the

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<sup>7</sup> A Medical Director occupies a statutory senior leadership role. Unlike Clinical Directors with responsibility for particular specialties, they propose strategic direction for the hospital as a whole.

<sup>8</sup> This is idiosyncratic to Alpha, since usually general surgery is profitable, for example, see Foot et al., (2012) who looked at service-line profitability across 7 hospitals.

top right hand corner of the bubble chart are “cash cows”- understood in BCG terms as rather staid units in mature markets that can be used to generate a steady flow of cash for the business as a whole. This cash cow terminology accords with the idea of unearned income (Mazzucato, 2018, p.9) because disproportionately rewarding standardised work can be seen as value extraction from the point of view of the hospital as a whole.

*“We have got [bubble charts]... the specialty with the more surplus and higher contribution margin goes on the top right hand corner, so if you look at your spot analysis those are your key cash cows.” (M2-D)*

This interpretation of “*top right hand corner*” as a “cash cow”, whose unearned income can be redistributed to others, can justify refusing to grant investment to a high financial value specialty, but not all specialties accept this.

### **5.1.5 Using financial value for investment, disinvestment and new business**

In Ophthalmology, the clinicians hope to avoid becoming, in BCG terms, only a subsidizing ‘cash cow’ which is ‘milked’ for the benefit of others – a fate which may have befallen to Dental Services at Beta. Acting to achieve gain is the most important values in business decisions (Van der Wal et al., 2008). With such a business value, the Clinical Director of Ophthalmology at Delta had gained some leverage from his bubble position and been rewarded with investment monies, but had lost solidarity with his colleagues and was unsure about the future. He comments:

*“I like the Bubble chart... the Eye Unit, we’re always up here, so you would hope it gives you leverage.... Certainly, not only have I used it for leverage, ad nauseam, I want to use it for leverage... It makes you feel less corporate... it almost puts you into battle with your colleagues if every time you go to a meeting, you say, “We’re the ones making money.”... “Carrot and sticks”, we’ve had lots of stick... We’ve had a little bit of carrot, with capital, so that’s good; we’re going in the right direction. If, however, in one or two years [...] it’s been a total waste of time, then I don’t know what we will do.” (CD4-D)*

In a similar mode, the Clinical Director for Theatres at Alpha is very aware that contribution to the organization can nullify profit.

*“The Trust always point out your profit, loss and your contribution. So it’s quite interesting in that you can make a profit and you have your costs, but your contribution to the organisation may wipe out your profit.” (CD1-A)*

Making a contribution to the hospital through cross-subsidization and redistribution ensures the financial viability of current services which are low financial value under the price tariff. Despite this redistribution, the Medical Director points out that, at Beta, the financial implications of taking on new business are always carefully assessed and decisions are made according to both public value and financial value.

*“So Community Paediatric Audiology, is that a business we can make money on, or we are always going to lose money?... if you have to make a big investment in capital infrastructure... then you have to make sure that’s an appropriate decision... it may be a good clinical decision, it may be good for children, but at least you should do it understanding the business implications... We have a commercial arm [Directorate] which looks at, essentially, our true profit margin on the tariff.” (MD-B)*

But at Alpha, the Deputy Director of Finance signalled that maintaining a full portfolio of services may not continue.

*“At the strategy advisory group, the Chief Executive is saying he isn’t precious about which services we provide anymore. Bloody hell, that’s come out of the Chief Executive’s mouth!” (F2-A)*

The Medical Director at Alpha also spoke of disinvestments in services, which are driven by financial considerations but he considered such disinvestments sensitive- in the context of still managing some conflict between professional values and financial value (cf. Chenhall et al., 2016).

*“So I wouldn’t want to say what the services are [which are targeted for disinvestment] because... it’s sensitive stuff. But yes, we are looking at services that may be delivered differently, and with this organisation, part of that will be financial consideration... our Monitor rating has to be green<sup>9</sup>.” (MD-A)*

The Chief Executive at Gamma also identified the economic regulator as the source of pressure for disinvestments.

*“The real question is, “What is a comprehensive cancer centre?” Why would we divest ourselves of something that’s not as profitable; just because we understand the profitability question... the Board were pushing at that question; mainly I think because the regulator and others said you should be divesting yourself of things that are not profitable.” (CE-G)*

This is early, but telling, evidence that, despite some redistribution, prices for some activities threaten both their adoption and their sustainability.

### **5.1.6 Value creation or value extraction at different levels in healthcare**

In sum, valuation devices, like bubble charts, rank financial value, through measuring the activity growth and contribution margin of different service lines under the price tariff. This bubble chart case demonstrates how clinicians now accept that price creates value, a shift away from their traditional professional view of value as inherent in the production of clinical activities. However, funding services through a price tariff is productive because it creates value through incentivising more activity. More activity equates to more clinical procedures and services, which produce value for the speciality, the hospital and the public.

At the level of the individual specialty, there is a tariff advantage for standardised services. Therefore, value production is skewed towards less complex care- as shown by the high activity growth in the areas of Dental Services and Dermatology (see Figure 1). This creates a problem for activity in the specialties which provide more complex care, such as oncology and acute medicine which are under-costed and hence, under-priced and under-funded- as compared to standardized care.

At the hospital level, some organizations have introduced financial redistribution to support the more complex, less profitable areas of care. But this engenders conflict because standardised services, such as Dental Care and Ophthalmology want to use their high

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<sup>9</sup> Monitor, the economic regulator, publishes a governance risk rating for ‘Foundation Trusts’. The rating can be green indicating “no evident concerns”, red indicating “subject to enforcement action” or no colour indicating that the Trust is “under review”. See, <https://www.gov.uk/government/publications/nhs-foundation-trust-directory/nhs-foundation-trust-directory>. Foundation Trusts are hospitals designated as “not-for-profit, public benefit, corporations... [with] greater freedom to decide, with their governors and members, their own strategy and the way services are run. They can retain their surpluses and borrow to invest in services for patients and service users.” See, <https://www.gov.uk/government/publications/nhs-foundation-trust-directory/nhs-foundation-trust-directory>



financial value to argue for additional investment and often resent their profits being redistributed.

At the level of healthcare system, as discussed earlier, citizens pay for the NHS through taxation. Thus, public value does have a value-for-money dimension. For the whole system, public value is not usually served through providing more standardised care within high cost settings such as teaching and research hospitals. Better public value is often enabled through treatment in primary and community care. For example, better public value for Ophthalmology dictates the use of “*virtual clinics*<sup>10</sup>, *technological solutions and treatment closer to home*” (NHS England, 2019, p.7).

This case has focussed on how Clinical Directors value different specialties according to their price tariff. But they are only one group who define value. As discussed earlier, the government are, arguably, the dominant group to delimit public value. We consider them next.

## **5.2 Valuing Activity 2: Political narratives and “up-coding”**

In this second valuing activity, we focus on the public value of emergency care. As the concept of public value is inherently political (Mazzucato, 2018, p.14), multiple definitions abound. Mazzucato and Ryan-Collins (2019) propose “*Public value... is created by public sector actors creating and co-shaping markets in line with public purpose*”.

In this section we consider three public sector actors who create and shape health care markets: the government, Clinical Directors of emergency care and the public. We mainly explore the professional narrative responses to the government’s narrative, both in discourse and covert calculation- the latter through the strategy of up-coding. We also set out the public’s view.

### **5.2.1 Government, professional and public valuations of Accident and Emergency Care**

As discussed earlier, an objective theory of value gave way to a subjective one as value became equivalent to what consumers would pay in a market (Mazzucato, 2018, p.7). But hospitals are funded through non-market, cost-based prices where the government has high control of both NHS funding and provision. Currently, the government has implemented funding through prices which favour standardised care and disadvantage complex work. As discussed earlier, some consider public value to be reliant on government intervention. Consequently, the government’s views on public value are significant but, in any debates, professional medical assessments also have weight.

Accident and Emergency (A&E) care is complex, A&E tariff prices are particularly low, relative to other specialties. A dominant government narrative assesses emergency care as high cost but of low public value- through inappropriate utilization, defined as patients attending A&E who could be better cared for, at lower cost, in a community setting (NHS England, 2013). Estimates of ‘inappropriate’ patient attendances at A&E vary widely, ranging between 14-40% (Carret et al., 2009; Weinick et al., 2010; NHS England, 2013). The UK College of Emergency Medicine commissioned research which found 15% of A&E attendances were inappropriate, challenging NHS England’s figure of 40% (Mann and Tempest, 2014). Also, the potential cost savings of re-directing patients away from emergency care may be small (Sharp and Fendrick, 2013; Galarraga and Pines, 2016) or even negative, if costs incurred in increasing access to primary care (to evenings and weekends) are included (Whittaker et al., 2016).

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<sup>10</sup> Community-based diagnostics shared virtually with a specialist secondary care clinician.

Another government valuation narrative frames A&E as a low public value “admission portal” (Sharp et al., 2014). In the English NHS, the economic regulator reports that over 70% of emergency admissions are from A&E (Monitor, 2016). Patient admission is a costly decision, thus addressing unjustifiable variability in admission rates should enhance the financial value of A&E care (Dean et al., 2012; Abualenain et al., 2013), providing better value estimates than the dominant political indicator of “inappropriate admissions” (Sharp and Fendrick, 2013).

In contrast, the public values emergency medical care very highly, because it is seen as a basic human right (ACEP, 2014). High public value is attached to the timely treatment of sudden, sometimes agonizing and life-threatening conditions (Aacharya et al., 2011). Extraordinary public value also resides in the unique roles of A&E in, first, responding to pandemics and mass casualties and, second, being a “safety net” for those with poor access to care (Sharp et al., 2014).

At the international level, evidence is growing that emergency care represents good economic value and is clinically very effective (Risko, 2019). Against this background, a professional valuation narrative argues UK prices do not take account of the increasing acuity and complexity of A&E work to provide the safety net, hence do not reflect its public value. For example, many more acutely unwell medical patients, including children, are being seen compared to twenty years ago, when the work comprised mainly minor with, occasional, major trauma patients (Hughes et al., 2014). The government acknowledges these changes in patient acuity and, hence, higher workload complexity but prices have not been revised accordingly (Monitor and NHS England, 2014). Another, related, professional framing recommends that value estimates focus on outcomes whenever patient acuity is high because emergency treatment for acute, time-sensitive conditions has considerable impact on outcomes, whereas for low acuity patients, value construction should focus on costs (Sharp et al., 2014).

Patient acuity is not reflected in A&E prices which do not encompass diagnoses, they depend solely on investigation, treatment and the type of emergency care facility (Monitor, 2016), resulting in a limited number of codes which do not reflect the costs incurred (see Table 1 below).

This is clearly demonstrated in the wide disparity in prices for the same condition when treated in A&E, rather than on a ward. For example, a patient with chest pain discharged after a blood test, chest X-ray and electrocardiogram has a £109 A&E price tariff, but, as a day case on a medical ward, the same treatment attracts a price of £673 (Hughes et al., 2014), using 2014-15 data from NHS England and Monitor. A poll of Members of Parliament (MPs) undertaken by the Royal College of Emergency Medicine showed that only one third thought A&E departments were resourced to a level which ensured patient safety (The Royal College of Emergency Medicine, 2017).

Given the low prices for emergency care, cross-subsidization and redistribution occurs. A Clinical Director in Haematology at Gamma “guesses” there is sufficient professional support for A&E for redistribution to continue. He recognizes the public value attached to providing emergency medicine and thinks there is sufficient support to avoid a free market where healthcare delivery is driven purely by “*what makes money*”.

*“Taking the worst-case scenario, the FTs [Foundation Trust hospitals] are just there to make money and therefore they’ll just cherry pick. But I guess there’s enough of you to say that actually, we have to have A&E departments. It’s good for humanity and as much as Trusts might like to say we’ll just do the stuff that makes money... it’s not*

*enough of a free market... [to say] nobody gets anything apart from elective knee surgery... we can definitely make money on that.” (CD1-G)*

The above quote indicates that financial value has not completely suppressed professional and public values (cf. Chenhall et al., 2016). The next section moves to the medical context where “the market” in healthcare has ambiguous status.

### **5.2.2 Producing financial value for Emergency Care through up-coding**

As outlined earlier, in markets, value and price converge. Neo-classical economic narratives account for this convergence through competitive forces (Beja and Goldman, 1980; French and Wiseman, 2003; Chordia et al., 2005), whereas socio-economic framings speak to the power of the price mechanism as a valuation device (Reinecke, 2010), so that value becomes objectified in prices (Slater, 2002; Fourcade, 2011; Helgesson and Muniesa, 2013; Mazzucato, 2018). Where price and value are converging, financial value increases with the price tariff paid.

As discussed earlier, clinical interventions are classified into HRGs which attract differential prices, i.e. the price depends upon which HRG the intervention is coded to. Thus, there is an incentive to code to the HRG with the highest price (Rogers, 2005). All English hospitals employ expert coders; their work is subject to standards and audit, see, for example, Capita (2014). However, coding relies on the medical records which clinicians write up. Judgment is inherent in classifying clinical interventions for coding. This circumstance can engender ‘up-coding’. The lawyers Phillips & Cohen LLP identify up-coding as follows, “*“Upcoding” occurs when a provider submits codes for more serious (and more expensive) diagnoses or procedures than the provider actually diagnosed or performed*” (Phillips & Cohen, 2016).

The Clinical Director for Acute and Emergency Medicine at Beta highlights the low prices for HRG codes for emergency care (given in the table below). Such circumstances reinforce the incentive for clinicians to be astute in recording interventions. From his perspective, financial value should be aligned with clinical value which is based on the production process. He emphasizes his professional view of the inadequate and, sometimes, paradoxical nature of the cost-based prices, when an “easy” clinical procedure attracts the highest tariff

*“[T]here are only eleven codes in A&E, and the highest one is £237. And that’s, of course, a cardiopulmonary resuscitation, which for us is nothing. The cardiopulmonary resuscitation is easy, but that’s our highest code. So if a patient comes in and we jump up and down on their chest for a few minutes, we get the best code we can.” (CD4-B)*

**Table 1:** Tariff information for A&E 2013 / 2014 (prices at the time of the interviews)

HRG code	HRG name	Tariff (£)	
		Type 1 and 2 Departments <sup>11</sup>	Type 3 Departments <sup>12</sup>
VB01Z	Any investigation with category 5 treatment	237	58
VB02Z	Category 3 investigation with category 4 treatment	210	58
VB03Z	Category 3 investigation with category 1-3 treatment	164	58
VB04Z	Category 2 investigation with category 4 treatment	139	58
VB05Z	Category 2 investigation with category 3 treatment	130	58
VB06Z	Category 1 investigation with category 3-4 treatment	102	58
VB07Z	Category 2 investigation with category 2 treatment	119	58
VB08Z	Category 2 investigation with category 1 treatment	110	58
VB09Z	Category 1 investigation with category 1-2 treatment	78	58
VB10Z	Dental Care	59	58
VB11Z	No investigation with no significant treatment	58	58

Source: Tariff information spreadsheet 2013 – 2014, Monitor and NHS England

In Type 3 Emergency departments, all tariffs are £58 (see above). This circumstance leads the Clinical Director to point to the gross disparity between the public value of an emergency service provided in the early hours of the morning and its price.

*“...Let’s say your hand gets squashed. You come out of a club, you fall over and you land on your hand. I will have to triage that through the Emergency Department. That*

<sup>11</sup> Type 1 department describes a “consultant led 24 hour service with full resuscitation facilities and designated accommodation for the reception of accident and emergency patients”. Type 2 describes “a consultant led single specialty accident and emergency service (e.g. ophthalmology, dental) with designated accommodation for the reception of patients”. Source: NHS Data Model and Dictionary, Accident and Emergency Department Type.

<sup>12</sup> Type 3 describes “Other type of A&E/minor injury activity with designated accommodation for the reception of accident and emergency patients.” Source: NHS Data Model and Dictionary, Accident and Emergency Department Type.

*involves a nurse. It will then need a radiographer. It will then need a doctor to interpret the x-ray, and then it will require a plasterer or a bandager to strap up the hand. And I will get paid £58 for that at four o'clock in the morning.” (CD4-B)*

This situation implies his work, almost always, makes a loss- unless he takes some action to increase the price- which he can when patients are admitted to his medical ward through A&E.

*“Most of my work is loss making. So, COPD [Chronic Obstructive Pulmonary Disease] is a good example, if a patient comes in with COPD the tariff is £990 [if the patient is admitted]. By coding better, I can improve my tariff. Now, this may be a simple COPD, but I will start looking for the ways I can make it into a non-simple COPD. Without being dishonest or cheating or not playing by the Monopoly rules that they’ve [the government] put in place. If for example the CO<sub>2</sub> [carbon dioxide] goes above six or the PO<sub>2</sub> [partial pressure of oxygen] goes below eight, I can increase the tariff to about £2,500.” (CD4-B)*

Earning power assigns value to an individual’s work (Livingston, 2016) and pride is a professional value (Marquand, 2004). The Deputy Finance Director at Beta comments:

*“Most of them [Clinical Directors] are very proud people and don’t want to do something that is making a loss.” (F2-B)*

Augmenting the value of emergency care through increasing its prices may restore feelings of competence to this Clinical Director. Competence is also a professional value (Marquand, 2004). Performance anxiety can lead to a search for loopholes in a classification system or result in the practice of ‘fiddling’ the numbers (Carter et al., 2010). Any accounting-based technology creates opportunities for discretion when applying its rules (Munro, 1999). Through referring to “*Monopoly rules*”, this Clinical Director indicates an insouciant attitude to classification and coding. Another opportunity to produce financial value through up-coding comes as a result of the inappropriate care delivered by the Ambulance Service to patients who will be admitted on to a medical ward.

*“Now I know most of the ambulance men... will stick lots of oxygen on my COPD patients. That will drive their CO<sub>2</sub> up. It’s inappropriate management by the Ambulance Service, but it will guarantee the CO<sub>2</sub> is seven when they arrive. The first thing my junior doctors do, a blood gas... So I just made £2,500. If this patient needs non-invasive ventilation at any point, an additional £1,000. If I then put in some complex coding, you know, they live alone, they’re a complex elderly patient, I can get probably another £1,600. I can cover my cost, if I cheat... I know what it’s like to be under so much pressure that you lose that compassion you need when you’re looking after people... you’re just processing people and you forget they’re people.” (CD4-B)*

This Clinical Director reflects on losing the public value of compassion whilst looking to up-code his “*product lines*” which the low prices for emergency care incentivise. He is “playing a game”, yet gets abused for losing.

*“So the tariff system is just a joke. And I live playing a game... I could cheat... [W]e are losing money furiously. We’re looking at a £5 million overspend this year in my directorate. And I get beaten to death about this.” (CD4-B)*

As mentioned earlier, the definition of up-coding is miscoding and misclassifying patient data, submitting codes for more complex interventions than those actually performed to receive higher reimbursements (Lorence and Richards, 2002). This Clinical Director takes advantage

of inappropriate care which necessitates more serious interventions, along with judicious searching for treatments and patient circumstances which increase the applicable tariff prices.

### **5.2.3 Value creation or value extraction at different levels in healthcare**

Different stakeholders are present at different levels of healthcare. As argued earlier, the government, middle managers in healthcare organizations (here, Clinical Directors) and the public all have a stake in the public value of healthcare. However, they have different stakes, as the government and the public have an interest in the whole system whereas Clinical Directors tend to focus on their Directorates.

Unsurprisingly, stakeholders value emergency care very differently (Sharp et al., 2014). We found political, professional and public assessments conflicted as politicians set low prices for what professionals and the public assessed as high value care. When public sector actors have such diverse views, it's not possible for them to shape the market in health care in line with public purpose- as Mazzucato and Ryan-Collins (2019) recommend. Yet, international research indicates that emergency care offers good economic and clinical value.

Mazzucato (2018, p.7) argues for a classical objective theory of value where value, primarily, lies in the amount of work or labour needed to produce the goods or services. The Clinical Director (quoted above) accords with this classical view, as he sees 'easy' procedures as having less productive value than difficult, time-consuming ones. Hence, under the current funding regime, the Clinical Director thinks the fundamental value of emergency care is not being recognised and respected in the prices awarded. Seen in this light, gaming the system through up-coding becomes permissible as "*a way of making ends meet*" (Zuiderent-Jerak et al., 2015, p.128) when A&E prices do not equate to the clinical and public assessment of its value.

On the other hand, up-coding can be seen as value extraction because "*gaming the system*" takes money away from legitimate reimbursements. Also, it is purely transactional with no productive value- it may even reduce public value. For example, one up-coding opportunity results from the Ambulance Service delivering inappropriate care. Consequently, there is a perverse incentive for the Clinical Director not to challenge this inappropriate care, which conflicts with the public value of high quality care.

## **5.3 Valuing Activity 3: Business cases and joint ventures**

In this third valuing activity, we focus on mobilising financial value through, first, business cases and, second, joint ventures with the private sector, highlighting the channels for value production and value extraction in both.

In hospitals, business cases are now standard practice when bidding for investment monies. Messner (2013) sees private sector business cases as identifying value, commenting that "*the term business case...describe[s] a document delivering a cost-benefit justification for an investment proposition; it may also be called...a value finder*" (p.38). HM Treasury (2013, p.8) recognises that business cases have a somewhat different function in the public realm, as opposed to the private sector, guidance for 'best practice', emphasizing that along with being "*attractive to the market place*" and "*commercially viable*", the project should encompass a strategic case which represents "*best public value*" and "*...change that provides holistic fit with other parts of the organisation and public sector*". Clearly, Treasury guidance envisages a whole system approach to public value.

### **5.3.1 Emphasising financial value through patient level costing in business cases**

Around the time business cases became a requirement for investment bids in hospitals, Finance staff had actively communicated patient level costing to clinicians as a new costing tool and promoted its use in business cases for investment. The economic regulator has announced that prices will be based on patient level data from 2021/22 (Monitor, 2014). Hospitals familiar with patient level costing will better understand the impact of the new prices and, where possible, may position themselves to concentrate on services where prices are advantageous. In a recent survey, 74% of hospitals say their PLICS data is “commercially sensitive” (Llewellyn et al., 2016); this may be indicative of its use to secure competitive advantage. Designating cost data as commercially sensitive also excludes its use in assessments of public value (Ellwood et al., 2015; Tunney and Thomas, 2015). Currently, hospitals require PLICS to evaluate the financial impact of any investment. Notably, contrary to Treasury guidance (see above), a value assessment for the wider public sector and an assessment of best public value was not required.

A Deputy Director of Finance at Gamma comments:

*“We also have made it [patient level costing] a requirement of businesses cases... So for any big business case, we’d expect to see a 15% improvement in the service line position as a result of the proposals.” (F1-G)*

This makes it clear that any business case only looks at financial benefit to the particular specialty (service line) rather than the hospital more broadly. Mobilising business cases recasts clinicians as entrepreneurs who bid for resources (Roscoe, 2015). The costing and income manager echoes this conception of business cases as leverage to get clinicians to “understand the business” and engage them with finance.

*“There’s a very big change in the NHS, clinicians are actually starting to understand the business... In all honesty, the way that it’s worked best for us has been through business cases.” (F2-G)*

For Gamma, the most significant recent business case was for building a Proton Beam Therapy (PBT) Centre.

*“Within the Finance Division, we also have capital business development... the two primary purposes are all around developing our international strategy, and, secondly, about protons. I’m sure you might have heard of the proton development? Obviously, that’s quite a big thing for us.” (F1-G)*

The Outline Business Case for PBT (redacted version, 196 pages), makes 5 cases: Strategic, Economic, Commercial, Financial and Management. Table 2 below presents extracts<sup>13</sup>.

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<sup>13</sup> The numbering for the extracts is as used for the different cases in the document.

**Table 2:** Extracts from the redacted Outline Business Case for PBT, 12<sup>th</sup> July 2013

**1. Executive Summary, Introduction:** “..the cost of a PBT treatment is approximately four times more than conventional radiotherapy” (p.6)

**1. Executive Summary, Strategic case, Core Risks:** “There are significant uncertainties in throughput and capacity relating to the technology and clinical protocols employed” (p.11)

**Commercial Case, Service Definition:** “treating up to 750 [NHS] patients per annum in total... alternative uses of the beam for private patients or research can only be considered as long as there is no detrimental impact to the care of the NHS patients” (p.15)

**4. Economic Case, Scoping Options:** “If spare capacity of beam time were available then private patients could be treated in existing rooms” (p.52)

**4. Economic Case, Short listed options:** “Option A: Forego the opportunity to develop a PBT service ...”; Option B: “Build a 3 room fully equipped PBT centre...”; Option C: Build a 3 room fully equipped centre... with additional benefits...” (p.58)

The decision to construct two facilities to deliver PBT in England at a cost of £250 million has been controversial in public value terms. Some media reports dub the machines expensive “*white elephants*” because government figures show that in 2011-12 the NHS sent only 79 patients abroad for PBT treatment, with a government projection for 400 patients a year by 2014 (Buchanan, 2013). A private sector company, Proton Partners International, announced plans to open 3 PBT centres in the UK at a cost of £100 million (Smith, 2015). The first private centre opened in advance of the NHS centres.

Delivering PBT is considerably more costly than photon beam therapy (the standard X-ray radiotherapy), as evidenced in Table 2 above, and may only be more efficacious for some children and certain rare cancers in adults, particularly ones located at or near critical structures such as the eyes, central nervous system and brain (Allen et al., 2012; Merchant and Farr, 2014). For some cancers, PBT may induce greater toxicities (Galland-Girodet et al., 2014). Even if 1,500 NHS patients a year are treated at the new PBT centres this will only be 1% of the number of patients receiving conventional radiotherapy (Smith, 2015).

But, in financial value terms, the US experience is that PBT is very profitable, a PBT centre can generate \$50million a year. In the US, PBT has been heavily marketed to patients as delivering a more precise beam, with less damage to surrounding organs and tissues than conventional radiotherapy (Epstein, 2014). Consequent upon the Health and Social Care Act (2012), NHS Foundation Trusts (such as Gamma) may now take up to 50% of their income from private patients. If PBT units in the NHS treat private patients they may not be “white elephants”, in financial terms. As Table 2 shows, the Business Case allows for the treatment of private patients so long as this is not detrimental to NHS patients. Both of the “*go-ahead*” options (B and C) were to build three treatment rooms<sup>2</sup>. The hospital chose Option C, where the additional benefits were a designated research room. Given the relatively small numbers of NHS patients, it seems unlikely three treatment rooms would have been built unless the hospital anticipated treating private patients.

In the US, despite no additional clinical benefits, along with much higher costs to patients, taxpayers and insurance companies, in 2012 about 70% of PBT patients were receiving it for



prostate cancer (Epstein, 2014). In the NHS, PBT is not being commissioned for patients with prostate cancer (NHS England, 2016), this creates opportunities for private sector provision.

A manager in Haematology pointed to a clinical responsibility, in accordance with professional and public values, to educate patients about the comparative advantages and disadvantages of new treatments, such as PBT, particularly if they are thinking about paying for private care.

*“[The Proton Beam Therapy Centre] is a Department of Health driven facility... I’m sure you know in a few years... they’ll be proton units all around the country that are private practice driven and then that’s down to patient choice... [But] if a prostate patient was saying I want protons and I’ll pay out of my own pocket, I think the clinician has got a responsibility to explain why that treatment is just as good as this treatment and educate them more about the risks of one against the other and having that evidence based practice as well.” (M2-G)*

But clearly, Gamma were aware of the US evidence of the substantial financial value of PBT from private patients, as the manager added:

*“In the States, some procedures are offered because of the financial benefit to the hospital ...protons [proton beam therapy] is quite widely used for prostate cancers [but data is] showing that the outcomes from having proton treatment is no different than having standard radiotherapy... when we’ve been developing our proton process, we’ve not looked at [the impact for] prostate patients but from an income generation perspective, it could be quite lucrative.” (M2-G)*

Consequent upon the 2012 Health and Social Care Act, up to 49% of the income of NHS Foundation Trusts can be from non-NHS sources. The number of private patients treated in NHS hospitals has risen by 58% since 2010 (Campbell, 2015). At Gamma, the income from private patients is significant because whilst the hospital is profitable overall (our data is the 2013-14 position), as a specialist cancer unit undertaking complex care, it makes a loss on admitted activity under the NHS cost-based price tariff. The income from private patients is one aspect of Gamma’s services which ensures financial viability. Income from private patients has been about 10 million per year (2013-14 figures), representing about 6% of total income. But, prior to PLICS, although the finance team knew the income, they did not know associated costs.

*“Previously our private patient costs – five, six years ago, we couldn’t tell you what our trading account was for private patients. They were just another set of patients. So we knew what the income was... but we didn’t have a PLICS system, so we didn’t know what costs were associated.” (F2-G)*

The PLICS system enables charging for all individual elements of care, thus putting NHS patients and private patients on a comparable basis. The costing and income manager also commented:

*“They [private patients] could come in for a CT scan, they could come in for moles removing... They’ll come in, they’ll have their plan drawn up by people in the planning room, so there’s a number of things that actually happen. The private practice will charge for each individual element.” (F2-G)*

In addition, there is a £14 million joint venture with [EFG], a private provider, set up in 2013 to create a new cancer clinic for private patients and expand the range of care provided.

### **5.3.2 Value extraction through a joint venture**

The Department of Health has encouraged joint ventures since 1993, when they removed the requirement for assessment against a fully funded NHS alternative. Initially, joint ventures took the form of Private Finance Initiatives (Sheaff and Allen, 2016). As explained in the previous section, the PBT centre at Gamma was built through public funding. Mazzucato (2018, p.197) points out how private companies often only participate in ventures after governments have provided the capital infrastructure- essentially once the investment is looking like a 'sure bet'. In this case, the US evidence shows PBT to be very profitable and, therefore, a possible opportunity for value extraction.

Clearly, a private sector healthcare company would not enter into a joint venture without estimating patient profitability to quantify potential value extraction. The costing and income manager explains how Gamma and EFG used PLICS to construct a trading account for private patients.

*“We developed the trading account [for private patients] with the PLICS system but now we’re in joint partnership with [EFG], an American company, so they’re private patients with the joint venture. They still trade with us, we will still do tests for them, et cetera, and we charge the joint venture, the joint venture’s owned by Gamma and EFG. And there’s a profit share agreement and all the rest of it.” (F2-G)*

The Clinical Director of Haematology argued that much of the income from private patients (presumably only with regard to Gamma’s share of the profit) was invested in NHS services.

*“What [Gamma] has seen, working in partnership with [EFG], is that, rather than a private provider generating huge surplus, it’s a partnership and a substantial proportion of that money is then used to reinvest into NHS services, so that impacts upon what our cost improvement plan would be, what business cases might be approved, what capital developments might go ahead, all as a consequence of working in a partnership with a private company... turning around what was a very small element of private practice, making it substantially larger.” (CD4-G)*

In terms of the increase in financial value from private patients, the same Clinical Director stated this was generated not so much from greater numbers but the ability of the private partner to negotiate with the insurance companies.

*“In fact, there’s been a modest increase in numbers but the actual financial growth has been quite significant because, you know, negotiated tariffs. If you’ve got a – you could describe it as being a relatively ruthless or more sophisticated international company negotiating what the tariff is, you’re going to get preferential terms as opposed to an NHS organisation negotiating with BUPA<sup>14</sup>, that’s made a huge difference I think.” (CD4-G)*

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<sup>14</sup> BUPA (British United Provident Association) is an international healthcare group offering private medical insurance.

As a Clinical Director in the NHS, he also reflected on the different values (in this case, ruthlessness) the private sector partner brought to the negotiating table and how a prime focus on making money produced much greater financial value.

*“You don’t like to think of yourself as a bit part-time and a bit rubbish at doing things but looking back at it, [Gamma] had private activity but it kind of just bumbled along. Whereas if you bring in people with a completely different background who don’t come from an NHS perspective and are ruthless about saying, we’re in this to make money, then, not surprisingly, it generates a greater dividend.” (CD4-G)*

In terms of private healthcare companies, the 2012 Health and Social Care Act aimed to create a “*level playing field*” for any “*willing*” (later amended to “*qualified*”) provider (hence AQPs) through making it mandatory for any healthcare service, which potentially could be provided outside of the NHS, to be put out to tender (see also The King's Fund, 2011; Patients4NHS, 2016).

One of the finance team reflected on whether AQPs could move in on Gamma’s core activity in radiotherapy and chemotherapy. Presumably unaware of the three planned private sector PBT facilities in the UK, she commented:

*“I think it would be difficult for people [AQPs] to come in on radiotherapy because it’s a million pound for a LINAC [linear accelerator] and then the bill for a bunker. Not to say it couldn’t happen, but chemotherapy’s a much easier one... what will stop Boots from coming in and starting to do the very, very simple chemotherapy, where it’s just oral, pick up a tablet and walk away with it, that could potentially be a big issue for us.” (F2-G)*

Given the threat of loss of work to the private sector, another perspective on joint ventures was that by working with a private sector provider you avoid losing activity to them. The Clinical Director of the Stem Cell Transplant Programme commented:

*“Pathology, we’re in the process of a joint venture tender with a third party provider... Bulk is everything for the pathology service and you can drive down the costs by doing that... it’s about removing the risk and retaining activity by pushing into the private sector, but retaining some of that income, then we don’t lose it somewhere else. And by working with a qualified provider then you don’t put yourself in competition with them.” (CD2-G)*

Despite the optimism of this clinician, when tax funded NHS hospitals undertake joint ventures with the private sector, a consideration of public value is relevant.

### **5.3.3 Value creation or value extraction at different levels in healthcare**

Given the considerable capital costs, the PBT business case does not appear aligned with HM Treasury’s guidance that public sector business cases should demonstrate public sector best value at the level of the whole healthcare system because only relatively small numbers of NHS patients will benefit from the treatment. At the level of the hospital, PBT creates financial value and secures the hospital’s financial viability through augmenting its income from private patients. Clinical Directors argue this revenue can then be used to reinvest in

NHS services. If this proves to be the case, then monies from private patients will produce public value for the NHS as a whole, given that many NHS patients travel to Gamma- as a specialist centre. But then Gamma, an NHS centre for complex cancer care, is only reliant on additional funding from private patients because it loses money on the price tariff which is set to advantage standardised care.

The capital cost of the PBT centre has been met out of public funds, yet the private sector partner benefits. As Clark (2015) points out, "*the emerging NHS market is attractive to private industry precisely because politicians stand behind it with a public chequebook*". Mazzucato (2018, p.191) argues that value extraction occurs when "*risks... are socialized, while the rewards are privatized*". In the PBT case her remarks are telling, risk is minimised for the private sector partner because they did not meet the capital cost of the new build and the US experience shows that PBT is financially lucrative for the private sector.

The Clinical Director argued that, at the level of the hospital, Gamma benefitted through acquiring expertise in negotiation from the private sector partner but, in an NHS context, resources should be allocated according to public value rather than bargaining skills. Organizational learning is an often-cited motive for joint ventures, but the acquisition of knowledge from partners can lead to conflict and instability and, ultimately, to dissolution (Yan and Luo, 2016, p.14). Clearly the private sector partner can learn about cancer care from Gamma, and through Gamma's PLICS system they can learn which aspects of cancer care are profitable. But having learnt private sector partners may walk away to establish stand-alone private hospitals. This is poor public value if the learning experiences of the private partner exceed those of the NHS partner and the contract limits the private partner's financial exposure<sup>15</sup>, whilst the risk to the public purse remains unlimited. Where the state has risked investing in infrastructure to enable innovation, Mazzucato (2013, p11) proposes that we should "socialise both risks and rewards", to ensure the public benefits from public investment in innovation (Mazzucato, Li, & Darzi, 2020).

## **6. Discussion: Cost-based pricing: Value creation or extraction in healthcare?**

The financialization of the real economy, meaning the productive sector, has been an extraordinary phenomenon over the past 30 years (Mazzucato, 2018, p.161). This advance dissolved the distinction between productive work and unproductive financial transactions because both became seen as value-creating. In the healthcare sector, financialization of hospitals in England intensified with the introduction of funding through cost-based pricing and profit centres. The bubble case shows that, for many clinicians, the aim is for profit rather than the production of health care services. But the question of whether cost-based pricing can produce or only extract value is complex; it's also an on-going story as events continue to unfold. As in the cases, we will discuss this at three different levels: the specialty or profit centre, the hospital and the whole health care system.

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<sup>15</sup> We were not privy to the details of the contract between Gamma and EFG, but in terms of the unlimited risk exposure of the public sector, the following instance is relevant. In the UK the sole example of a private sector provider, Circle, taking over ownership of an NHS hospital was Hinchingsbrooke. This ended with Circle pulling out after the Care Quality Commission had imposed special measures. Circle's agreement stated that if its deficit reached £5m it could terminate the contract, which it did- transferring the rest of the deficit to UK taxpayers. Scourfield, P. (2016). "Squaring the Circle: What lessons can be learned from the Hinchingsbrooke franchise fiasco?" *Critical Social Policy* 36(1): 142-152.

## **6.1 The speciality/profit centre**

As mentioned in the bubble case, unsurprisingly, funding on the basis of activity augments activity, as compared to the previous system of block contracts that did not reflect levels of activity. Estimates vary over the extent of this increase after the introduction of PbR, but one indicator, patient waiting lists, reduced (Dredge, 2008). Clearly, better access to more healthcare creates value for the public. Also, preliminary work shows that cost-based prices can be set to incentivise hospitals to improve the quality of healthcare (Allen, 2016). Earlier, we mentioned best practice tariffs as a means to better quality but these prices reward processes, e.g. the use of care protocols, rather than healthcare outcomes. Nevertheless, cost-based prices do create value through increasing activity which reduces waiting times. Funding through differential prices can also be used to enhance quality, another value creation possibility. Hence, introducing cost-based prices to fund specialties and profit centres can create value. Whether PbR also constitutes a means for value extraction, requires a closer examination.

As anticipated by Mazzucato (2018), Fourcade (2011), Karpik (2011) and Graeber (2001) we found convergence between price and value across the cases, in the sense tariff prices were seen by Clinical Directors as signals of value. As mentioned earlier, this convergence reflected the opaque nature of the cost-based pricing technology -from the clinical perspective. Although the hospital finance staff understood the tariff inequities, they did not communicate them to clinicians for fear that these would be mobilised as excuses to avoid making cost savings. As mentioned earlier, the price advantage for standardised work can be seen as unearned income (Mazzucato, 2018, p.9), which is a means to extract value.

All the Clinical Directors took pride in improving their financial position – which restores the feelings of competence eroded whilst making a loss. Yet, accepting price-value equivalence undermines the traditional medical value hierarchy based on producing an intellectually sophisticated knowledge base and the mastery of the clinical production process. This professional hierarchy, based around production, affords a top ranking to surgery which did not always find particular prominence in financial value terms. A hierarchy based on financial value calculated through traditional cost-based pricing is anomalous in medical terms because it privileges specialties undertaking standardised, non-complex work. Such valuations are strange and surprising in the context of the higher prestige usually accorded to complex, sophisticated, innovative and technically advanced medical production practices.

Instituting prices and profit centres at the specialty level created an internal market within hospitals through turning Clinical Directors into economic agents who focus on the profitability of their specialties. This can enable value creation through incentivising more activity to make more money or could be used to create value through rewarding better quality. But the convergence of price and value puts in place the conditions for value extraction. This is happening through those specialties doing more standardised work extracting value through unearned income.

## **6.2: The hospital**

At the level of the hospital, the economic regulator's vision of specialties as independent businesses in a market is incompletely realised. Medical Directors, with no particular allegiance to a speciality, and some Clinical Directors assert the professional and public value of comprehensive healthcare provision and advocate cross-subsidization to sustain loss-

making specialties. Under the professional values of solidarity and shared responsibility, the profitability of the more standardised specialties, as visualised in bubble charts, was mobilised as evidence they could support specialties of low financial value, a “*contribution*” of the specialist “*parts*” to the hospital “*whole*” (cf. Heracleous and Jacobs, 2008). This redistribution can be seen as value creation through rebalancing the funding of all specialties consequent upon the unearned income of those offering more standardised services (cf. Mazzucato, 2018, pp.xviii, 271).

Yet, even when redistribution occurs, the traditionally-based accounting construction of financial value is not questioned. Yet it could be. Introducing activity-based costing of individual patients, for example, could, at least partially, correct the over-costing and over-funding of standardised, elective medical work along with the under-costing and under-funding of non-elective complex work, such as, arguably, occurs in emergency care. This costing model should alleviate the need for redistribution if hospitals are operating efficiently. Competitive market theories assume prices have validity in signalling costs and benefits. Here, the price signals about costs are misleading. Also the cost-based tariff gives no signals about health care benefits.

We found no evidence of arguments within hospitals for value-based pricing. Expert opinion can add value for products (Garcia-Parpet, 2011; Karpik, 2011), but Clinical Directors did not mobilise their medical knowledge to speak to the price-value question, they addressed it only in economic terms. Nor did the Clinical Directors challenge the tariff funding through producing their own accounts through ‘vernacular accountings’ (Kilfoyle et al., 2013). This lack of challenge to the dominant “price equals value” narrative, even from those who were disadvantaged under the tariff, facilitates value extraction (cf. Mazzucato, 2018, p.271).

One clear opportunity for value extraction from healthcare is privatization. Basing prices on a traditional costing mode which over-costs standardized procedures and under-costs complex ones favours private sector providers because they, in general, wish to undertake standardized work. Private sector providers, however, will only enter health care where profits can be made. Since not all areas of the NHS are profitable, conditions for profitability have to be created (Krachler and Greer, 2015).

Joint ventures in hospitals, such as in our third case, can create these conditions. The capital cost of the PBT centre was met out of public funds. Consequently, the joint venture facilitates value extraction because the private sector partner is draining the value created by government investment (cf. Mazzucato, 2018, pp.189-228). As Clark (2015) points out, “*the emerging NHS market is attractive to private industry precisely because politicians stand behind it with a public chequebook*”. Profitability does not guarantee public value. The US experience is that PBT is highly profitable, but does not benefit all patients. Privatization is multidimensional (Maarse, 2006; Powell and Miller, 2013). Aside from joint ventures, shifting professional medical values signal willingness to engage in the distinct dimensions of privatization, such as receptivity to treating private patients within NHS facilities, outsourcing support services to the private sector and, given funding constraints and longer waiting lists, acquiescence in the transfer of NHS patients to the private sector. Meanwhile, owing to financial value extraction by the private sector, it becomes increasingly difficult for NHS hospitals to maintain financial viability as the percentage of their non-elective and complex NHS work rises.

### **6.3 The whole health care system**

The distribution of health care is best seen and understood at the level of the whole health care system. The founding principles of the NHS, which were found to be still applicable, are: comprehensive treatment, within available resources; universal access, based on need; and services delivered free at the point of delivery (The Bevan Commission, 2011). According to these principles, distribution should be based on need and, within the limits of resourcing, comprehensive.

Once the production of health care is financialized, certain distributive consequences flow as producers seek higher profits (cf. Mazzucato, 2018). Clinicians drive healthcare production. As our cases demonstrate, for them, a price mechanism places value on patients, creating two categories: the profitable sick and the unprofitable sick. In a financialized health care system the profitable sick would be treated to the detriment of the unprofitable sick. Those attending emergency care are unprofitable patients, whereas those requiring, for example, standardized elective knee or hip replacements are profitable. Prices incentivise profitable care rather than care according to need. Sometimes need-based care is profitable but, if the care is complex, it tends not to be. A financialized health care system cannot guarantee a needs-based allocation of resources. Also, we found that hospitals used bubble charts to make decisions on investments in new areas of care, or disinvestments in existing areas, on the basis of their financial value to either the specialty or the hospital, rather than in accordance with their public value, whether defined as productive value creation or as value for money across the whole NHS. Under the financial logics of profit centres and the price tariff, hospitals are incentivised to retain standardised work in-house. Yet public value, whether defined as value for money within a tax-financed system or as better access across the whole health care system, would be enhanced if non-complex work, such as dental services and ophthalmology, was undertaken in community settings which are generally less expensive and offer greater patient convenience and satisfaction (The Health Foundation, 2011; NHS Confederation, 2012; The King's Fund, 2014). Instead of the fragmentation associated with hospital profit centres, the National Audit Office (NAO) argues for Integrated Care Providers, population-based models of care that integrate primary, secondary, community and social care services under one single provider contract (NAO, 2018). This addresses value extraction within hospitals through moving the consideration of value to this integrated care model which operates across provider hospitals.

Joint ventures also raise issues at the level of the whole health care system. When tax payers' money is extracted by the private sector, profits are distributed to shareholders, rather than retained in the NHS, so public value for money inevitably reduces. The question of public value in relation to the private sector also has wider significance. Of the ten private sector providers competing for NHS services, only two pay any significant tax and all use tax havens (Boffey, 2015). Until recently, the NHS tried to avoid using companies with tax-avoidance strategies, but, in 2016, these rules were scrapped (Armitage, 2016). Since the Health and Social Care Act (2012), the private sector has won over 70% of NHS tendered contracts, and by 2015 this had already resulted in over £13 billion worth of NHS work on which, for eight out of ten of the companies involved, no tax was paid (Unite, 2015). The NHS is tax-funded, allowing companies to profit from the NHS but not paying tax raises questions over the government's commitment to the public value (defined as value for money within a tax-financed system) of the service (cf. Mazzucato, 2018, p.168).

Mazzucato (2018, p.265) proposes a broad understanding of public value which provides a normative consensus about, inter alia, the rights and benefits of citizens and the principles governments should adopt in their policies. The public value the NHS, 84% think it should be run in the public sector<sup>16</sup> and a majority (54%) now support raising income tax to fund it<sup>17</sup>. The government is cognisant of the public's views so they do not openly challenge the founding principles of the NHS, nevertheless the financialization of the NHS does undermine the public's normative consensus on the rights of citizens to health care on the basis of need and a comprehensive service. Further financialization may also threaten the principle of free at the point of delivery.

#### **6.4 Public value and cost-based prices: value creation or extraction?**

##### **Concluding comments**

In introducing prices and profit centres, we do not dismiss the notion that the government was pursuing public value. We acknowledge that cost-based pricing created public value through raising activity levels. Also, we recognise the potential, inherent in cost-based pricing for enhancing the quality of health care. But, as the above findings and discussion make clear, the NHS is a complex interconnected system. What creates value for an individual profit centre can become value extraction at the level of the hospital and across the NHS in its entirety.

We conclude an assessment of the public value of cost-based pricing, given its potential for both value creation and value extraction, requires a whole system approach which cannot emerge from creating fragmented profit centres in hospitals. This notion of public value would be shared and communicated across the NHS. Our concept is one of "*pooled public value*". This could be underpinned by cost-based prices at the national average for the procedure, to incentivise activity, but only through an accounting method which does not favour standardised, elective care and, thus, threaten the sustainability of complex care. 'Pooled public value' requires that value is not restricted to cost-based prices at the individual provider level, but is considered across all healthcare settings. For the reasons analysed above, and highlighted in the PBT case, we are sceptical of privatization in the context of pooled public value.

Currently, the government has delegated public value to a price mechanism which shifted professional values from a focus on production processes to an emphasis on financial value. This new convergence is concerning in and of itself but the accounting choice of a traditional mode of cost allocation for pricing healthcare is turning value creation at the individual profit centre into forms of value extraction at the level of the hospital and across the NHS as a whole.

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