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Veronesi, G, Kirkpatrick, I and Altanlar, A (2015) Clinical leadership and the changing governance of public hospitals: Implications for patient experience. *Public Administration*, 93 (4). pp. 1031-1048. ISSN 0033-3298

<https://doi.org/10.1111/padm.12183>

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Clinical leadership and the changing governance of public hospitals: Implications for patient experience.

Abstract

A growing evidence base suggests that increasing the involvement of clinical professionals on governing boards of hospitals has a positive impact on organizational performance. However, less is known about the wider conditions that influence this process and whether recent moves to restructure the governance of public hospitals, extending their formal autonomy, has made any difference to the outcome of clinical involvement on patient experience. Using four years of data and concentrating on the acute hospital sector in the English National Health Service (NHS), this study shows that clinical participation on hospital governing boards can significantly improve the patient experience of the care provided. Yet, whereas a more autonomous organizational form (Foundation Trust status) does not seem to produce positive effects on its own, patient experience appears to markedly improve in those organizations that have both higher levels of clinical involvement in their strategic apex and greater flexibility in decision-making.

Keywords: Clinical Leadership; Governance; Organizational Autonomy; Patient experience.

**Clinical leadership and the changing governance of public hospitals:
Implications for patient experience.**

A distinctive feature of New Public Management (NPM) reforms over the last two decades has been the drive to co-opt professionals such as clinicians, social workers and head teachers into the management of services. Professionals taking on these roles have been considered 'hybrids', owing to the fact that they straddle both professional and managerial domains, often bridging the gap between two occupational groups with different interests and priorities (Noordegraaf 2011). In health services this trend has been especially marked with doctors and other clinical professionals becoming more active in the strategic management of public hospitals and other organizations, through membership of governing boards (Numerato *et al.* 2012; McGiven *et al.* 2015).

In the health context, debates about the likely consequences of this management turn have become increasingly polarized. On the one hand it has been argued that recent trends are undermining the autonomy of clinical professions, reinforcing divisions between senior doctors and nurses (who take on management roles) and the rank and file (O'Reilly and Reed 2010). On the other hand, there is a growing body of research that highlights the positive impact that clinical leadership and management can have on a range of service outcomes (Conry *et al.* 2012). This is especially true of studies that have focused on the governance of public (and private) hospitals in the US and (increasingly) Europe. With some exceptions this research has consistently found that greater clinical participation in hospital board level discussions can have an impact on clinical quality outcomes (Jiang *et al.* 2009; Goodall 2011; Veronesi *et al.* 2013).

Notwithstanding the growing body of evidence on the impact of clinical (especially medical) leadership, our understanding of the wider conditions that influence this process remains undeveloped. Potentially important here are NPM reforms around the world that have led to the re-structuring of (vertically integrated) public bureaucracies to create semi-autonomous organizations with their own (corporate style) boards (Pollitt and Bouckaert 2011). In the health sector, for example, Saltman *et al.* (2011) note the emergence of public hospitals in a number of European countries that have been re-designated as state owned enterprises with greater financial and institutional autonomy. It might be argued that these moves to extend the formal autonomy of some public hospitals will have a positive impact on the influence of clinical professionals in strategic decision-making and outcomes. This assumption seems especially valid given the fact that one of the aims of these governance reforms has been to encourage managers and clinicians locally to become more responsive to patient needs and innovate with patient centred care. However, to date, only limited attention has been given to addressing whether or not this is indeed the case.

In this paper we address this gap focusing on the acute hospital sector of the English National Health Service (NHS). Specifically, we investigate *two* questions. First, in line with other studies, does increased participation of clinical professionals on hospital boards' impact positively on performance outcomes? Here we depart from previous research (that measures clinical and/or financial outcomes) and focus on the issue of patient experience. This, we argue, represents a more substantial outcome measure than official quality rankings/indicators, which are limited in a number of respects. It has been noted, for example, that performance indicators often fail 'to capture quality in the sense of impact or outcome' (Bevan and Hood 2006; p. 529), due to intentional output distortion (achieving targets at the expense of other unmeasured aspects of performance), effort substitution (decreasing effort

on performance dimensions that are not explicitly measured) or, more generally, because they do not provide a sufficiently rounded view of hospital performance (Mannion *et al.* 2005).

Patient experience is also a measure which is known – from a variety of international studies - to be influenced by the ‘quality orientation’ of senior hospital management teams and the extent to which they respond to clinical concerns about service improvement (Marley *et al.* 2004).

Second, we focus on the question of whether any impact of clinical participation on boards is moderated by organisational differences between hospitals and, specifically, the extent to which they have been granted higher formal autonomy in their governance. To address this question, we use the move towards Foundation Trust (FT) hospital status in the English NHS (from 2003 onwards) as a proxy for increased formal autonomy - autonomy which, as we shall explain later, may not always be exercised (Anand *et al.* 2012).

Clinical participation on boards and performance: the evidence base

There is now a growing evidence base to suggest that increasing the involvement of clinical professionals (particularly doctors) on boards of hospitals has an impact on performance.

This is notably the case in the North American literature. With some exceptions (Succi and Alexander 1999), this research overwhelmingly suggests that clinical participation at board level has yielded higher quality performance in the process of care and mortality (Jiang *et al.* 2009), higher quality rankings of hospitals (Goodall 2011) and greater hospital occupancy and operating margins (Molinari *et al.* 1995).

In the European context, the development of corporate style boards is a more recent phenomenon in the public sector, with variations between countries (Kirkpatrick *et al.* 2013). However, here too, a small number of studies point to an association between greater clinical participation at this level and performance outcomes. For example, looking at eight countries (Czech Republic, France, Germany, Poland, Portugal, Spain and Turkey) Hammer *et al.* (2013) show that the quality of leadership, comprising clinical involvement on hospital boards, is significantly associated with a greater maturity of quality management systems. A study of NHS acute hospitals in England by Veronesi *et al.* (2013) also finds that a greater ratio of clinical members on governing boards generates better quality ratings.

Explanations for this influence of clinicians on boards vary. Generally, the underlying assumption is that clinical leaders possess a greater knowledge of the core business of hospitals, thus helping to develop service improvement plans which are better informed and targeted (Ford-Eickhoff *et al.* 2011). The impact of board members with a clinical background may also be attributable to the enhanced credibility of clinical leaders helping to increase the likelihood that changes will be accepted and implemented by their colleagues. As Goodall (2011; p. 538) suggests ‘a doctor-leader who has spent years as a medical practitioner has acquired integrity that implies “walking the walk” which enhances a leader’s credibility’. This, in turn, may contribute to hospital performance by fostering stronger professional engagement at lower levels (Ham *et al.* 2011).

Useful parallels might be drawn here with research focusing on the presence of women in the boardroom. Critical mass theory (Kanter 1977), for example, postulates that group (such as hospital governing boards) interaction processes are more effective when those groups are tilted (with a less extreme distribution) or balanced (characterised by a substantial

representation of a subgroup). Essentially, an increase in the diversity of boards helps to ensure a less tokenistic participation of sub groups (including women) and a greater possibility that their distinctive knowledge and perspective will be taken into account (Torchia *et al.* 2011). Translated to the public hospital context, this suggests that a ‘critical mass’ of clinical directors (the sub group in question) on boards will result in more productive discussions in the boardroom (Joecks *et al.* 2013). Specifically, it could lead to a stronger ‘quality orientation’ of top leadership teams (Schoenfelder *et al.* 2011)

Clinical leadership and the changing governance of public hospitals

While the evidence base to support greater clinical involvement in strategic (board level) decision-making is growing, less is known about whether its impact is always present or whether it is greater in some contexts than others. In particular, how important are parallel NPM reforms across Europe aimed at increasing the financial and institutional autonomy of public hospitals (Pollitt and Bouckaert 2011; Kirkpatrick *et al.* 2013)? This process has led to the emergence of new organizational forms such as limited liability companies in the Czech Republic, ‘public enterprise entity hospitals’ in Portugal, public enterprises in Norway and FTs in the English NHS (Saltman *et al.* 2011).

The latter are a perfect example of the far reaching nature of these reforms. Introduced following the Health and Social Care Act (2003), FTs remain part of the NHS, but are re-designated as non-profit, public benefit corporations with significantly more formal autonomy than other NHS trusts (Allen *et al.* 2012). This autonomy grants FTs enhanced freedom to develop services locally, recruit staff and retain operating surpluses, all supported by a lighter regulatory regime with FTs accountable to an independent regulator: Monitor.

Governance arrangements have also been transformed, with all FTs required to establish two tier board structures, including a board of directors (comprising executive and non- executive members) and an elected board of governors made up of various local stakeholders, including patients (Wright *et al.* 2012; Chambers *et al.* 2013).

Returning to our main concern in this paper, there are reasons to expect that these changes, increasing the formal autonomy of some public hospitals in the NHS (and elsewhere) will have consequences for the extent to which clinical professionals are able to influence policy and impact on services. First, it is important to note that this was an important rationale for the introduction of FTs. According to an ex-Secretary of State for Health, Alan Milburn, the aim was to pass ‘greater devolution of power and responsibility from the Department of Health to the clinicians and managers who are responsible for care at the front line – so that the people who know best what needs to be done can take action without going through a complex bureaucratic process’ (Francis 2013; p. 292).

Beyond this, it is likely that FTs will be more responsive to and able to implement clinically led changes aimed at improving patient services. Where responsiveness is concerned, the increased accountability of FTs to local stakeholders, including patients, may ensure that quality improvement projects favoured by clinical leaders are given air time in board level discussions (Veronesi and Keasey 2012; Wright *et al.* 2012). Because FTs have more formal autonomy and ‘room for manoeuvre’ this could also mean that they are less focused on complying with immediate performance targets and are more able to pursue longer term service development strategies (Allen *et al.* 2012; Raleigh *et al.* 2012). The fact that the FTs are allowed to retain budget surpluses may further support this. Indeed, there is some evidence to suggest that many FTs have sought to re-invest surpluses and that ‘the aim of

improving patient care was a clear driver' (Allen *et al.* 2012; p. 97). Examples of this investment to 'improve the quality of services' include 'increased consultant cover for accident and emergency services; improving maternity services; and infrastructural investments (such as better information technology)' (ibid).

Hence there are reasons for assuming that the influence of clinical leaders at board level (and their impact on service outcomes) will be enhanced by current moves to reform the governance arrangements of public hospitals and extend their autonomy. However, at the same time there are risks of over-stating this tendency. An obvious problem concerns the extent to which FT boards are willing and able to exercise their greater (formal) autonomy. Although some studies suggest that, on balance, FT boards do benefit from having greater discretion (Allen *et al.* 2012) others note how various institutional conditions have led to risk aversion in many cases (Exworthy *et al.* 2011; Anand *et al.* 2012). Anand *et al.* (2012, p. 215), for example, suggest that, despite lighter touch regulation, FTs remain embedded in a 'web of accountability' and conclude that 'the increasingly exposed position that some hospital managers find themselves in appears to have encouraged behaviour that is sometimes risk-averse - counter to the general policy aim of promoting innovation'.

The available research therefore suggests that greater formal autonomy of hospital boards may not, in itself, facilitate greater clinical influence in decisions. Indeed, depending on how managers locally interpret their situation it is possible that FT boards will be no more amenable to longer term strategies aimed at patient care than non-FT boards. As the Francis report into failures at Mid Staffordshire NHS Trust (a FT) concluded, such boards may continue to be characterized by what Jacobs *et al.* (2013) describe as a 'hierarchical culture', focused mainly on the financial viability of hospitals and compliance with immediate

performance targets. This may also align with a ‘unitary’ and ‘command and control’ viewpoint of general managers which ‘denies the legitimacy for clinical leadership and emphasizes instead a single source and locus of control (general management)’ (Edmonstone 2008; p. 296).

Hence, while there is increasingly strong evidence to suggest that greater participation of clinical professionals on hospital boards will have a positive impact on performance outcomes, the extent to which this impact is moderated by wider changes in the organization and governance of public hospitals (increasing their autonomy) remains unclear.

Data and methods

To address the concerns highlighted so far, we focused on health care organizations in the acute hospital sector in the English NHS. Trust is the legal form under which a hospital (or, in most cases, a group of hospitals) operates in a semi-autonomous way since the early 1990s. Like private sector firms, trusts are run by a board of directors made up of executive and non-executive members. Following the prototypical corporate board template, NHS boards are primarily responsible for the monitoring of executives decision-making, for providing leadership and for formulating the organizational strategy (Veronesi and Keasey 2012; Chambers *et al.* 2013).

Focusing on this sector we investigate *two* questions. First, is the question of whether increased participation (or critical mass) of clinical professionals on hospital boards positively impacts on patient experience? Second, to what extent is this impact of clinical participation (on patient experience) moderated by moves to grant some public hospitals

greater formal autonomy in their governance? To answer these questions we draw primarily on three set of data sources: the annual NHS trust Inpatient Survey, which has been run on annual basis by the Care Quality Commission (CQC) since 2001; an original database of hospital governance information at the board level, focused on the professional background of board directors (see below); and a series of publicly available data including the CQC hospital ratings and hospital activity indicators, which were drawn by the NHS Hospital Episode Statistics.

For the four years under investigation (from 2005/06 to 2008/09) we gathered information on 99 trusts from a total population of 169. While the total number of observations stands at 272 over four years, the panel is unbalanced as we move from 39 organizations in the first year to 99 in the final year (57 in 2006/07; 77 in 2007/08).

Dependent variables

As noted earlier in this study we depart from other research by focusing on patient experience as a key performance outcome. The views of patients on the quality of the service provided are drawn from four years (2006-09) of the patient experience survey data. This survey covers a sample of 850 patients for each acute NHS trust and includes a set of questions that range from explanations provided by clinical staff to the comfort of the facilities.

Specifically, it collects inpatients' reports on five main dimensions of care: access, co-ordination, information, relationships with clinical staff and comfort. Patients (all aged 16 and over and excluding patients admitted to maternity wards) are asked to fill a postal questionnaire a few weeks after discharge from the hospital. Two reminders are sent to non-responders to encourage completion, yielding an overall response rate normally around 55% (Pérotin *et al.* 2013).

For each dimension of quality the scores obtained are simply averaged by the CQC to produce five indexes. The first index - 'access and waiting' (Access) - collects the patients' evaluations of changes in admission date, the length of time on the waiting list, and the waiting time before admission to the ward. The second index - 'safe, high quality, coordinate care' (Coordination) - captures the patients' views on coordinated information, discharge delaying, and explanations about danger signals after leaving hospital. The third index - 'better information, more choice' (Information) - reflects patients' experiences with involvement in decisions over care and treatment and explanations of medications' purposes and possible side effects. The fourth index - 'building relationships' (Relationships) - aggregates patients' opinions on answers received from doctors and nurses and acknowledgement of the patient presence in their conversations. Finally, the fifth index - 'clean, comfortable, friendly place to be' (Comfort) - refers to patients' views on noise levels, food quality, cleanliness, privacy, respect and dignity and pain management. Subsequently, the indexes are grouped, averaged and then a final overall score (hereafter All Round) is obtained and used by the CQC as a summary indicator of the patient experience with a hospital trust.

When using the data from the NHS Inpatient Survey some caveats need to be applied. Firstly, as in other studies analysing patient experience, overall (positive) scores tend to be high, although this is not believed to affect the validity of the responses (Thi *et al.* 2002). Secondly, the focus of the survey is exclusively on process quality, e.g. how promptly a patient is discharged, and not on evaluations of clinical effectiveness (Coulter 2006). Third, the survey covers measures of quality that could be affected by different patient expectations, especially those arising from the social and demographic characteristics of patients. However, it has

been shown elsewhere that the overall effect of these variations in the patient population has only a limited impact on the validity of the survey (Pérotin *et al.* 2013).

Although improved over the years, the NHS Inpatient Survey and its subsequent coding are potentially marred by some pitfalls, which needed to be addressed. The grouping of questions (20) into five domains is to some extent arbitrary and fails to consider the statistical relationships between questions when the overall score is calculated (Pérotin *et al.* 2013). To control for this potential shortcoming we conducted Principal Component Analysis (PCA) on the scores of the individual questions within each CQC domain. The PCA score obtained is able to capture the maximum variability of the original question scores in the five domains. The five principal component scores were then used as dependent variables in our model to corroborate the findings of the analysis run using the CQC indexes.

Furthermore, Factor Analysis (FA) was employed as a data reduction technique to identify patterns in the questions measuring different dimensions of quality of care, basically finding meaningful ways of aggregating all the questions. Within the dataset, three factors were identified, which in total accounted for 66% of the variance. Through Varimax Rotation Method, the number of variables that had high loadings on each factor was minimized to simplify the interpretation of the factors. The factors were then used in the regression analysis to substantiate the analysis performed with the CQC indexes.

Independent variables

To address our first question – regarding the impact of clinical participation on boards – we looked at the expertise of board members, namely the ratio of directors with clinical expertise to the total number of board members. Due to the absence of a central repository of

information on individual NHS trust governance arrangements, we created an original dataset by navigating and manually working through the official documentation (mainly annual reports and accounts) published by individual trusts on their websites. As mentioned earlier, not all trusts provided information on the qualifications of their board members (for instance, doctors, nurses, accountants and so on) and job titles, thus limiting the sample size.

Summary statistics (not reported here for the sake of simplicity and brevity, but available on request), showed that the overwhelming majority of the clinical directors in our sample had executive roles in the boardroom. On average, 25.6% of the board directors had a clinical background (13.7% doctor directors and 12.1% nurse or other allied health professions directors). Clinicians were CEOs in 19.5% of the cases and chairs of the board in only 7%. These percentages did not change significantly over time.

To address our second question we used FT status as a proxy for greater hospital autonomy in decision-making. As noted earlier, since 2003 a growing number of trusts have been re-configured through a process of authorization into a more independent organizational form in relation to the management of resources and strategic orientation (Exworthy *et al.* 2011). As such, FT status (or not – a dummy variable) serves as a useful proxy for assessing the level of formal autonomy and greater flexibility in strategic and operational matters. In the sample, 70.5% of the cases were FTs. Importantly, we found no statistically significant difference in terms of the percentage of directors with a clinical background between FTs and non-FTs. This has implications for our analysis of question two because it suggests that any impact that FT status might have on patient experience is not driven simply by a higher level of participation of clinicians on their boards.

Control variables

To confirm the explanatory power of clinical participation and organizational autonomy for patient experience, a series of control variables were introduced in the regression model (see below). First, as is typical in hospital governance research (Chambers *et al.* 2013; Veronesi *et al.* 2013), controls were included in the analysis for board size (measured as the total number of directors), the level of independence in the board given by the percentage of non-executive directors and gender mix within the board. Hospital boards had, on average, around 12 directors. The percentage of non-executive directors stood at 51.1, with 34.6% of all directors being female.

Following a standard approach in NHS acute care sector research (Salge 2011; Pérotin *et al.* 2013; Veronesi *et al.* 2013), other control variables related to levels of hospital trust activity, efficiency and the characteristics of each trust's catchment area. Regarding the latter, we used the total number of inhabitants as reported by hospital trusts adjusted for the number of beds available and the mean age of patients. Also included in this model were factors such as case load (number of admissions divided by the total staff number), waiting times for admission, the severity of cases treated (using the length of stay in hospital for each patient as a proxy) and the percentage of bed occupancy. Taken together these factors help to differentiate between trusts in terms of the challenges they face given the available resources and particular patient populations and how these, in turn, may shape patient experience.

To check if more efficient trusts are capable of generating better patient experience, we employed a measure of performance published on annual basis by the then – now CQC - Healthcare Commission (Healthcare Commission 2008), focusing on the management of resources mainly from a financial perspective. In the analysis, we used a dummy variable to

differentiate trusts achieving the maximum score from those with lower financial ratings. Following a similar approach we used the composite quality score given on annual basis by the regulator which captures capture performance along a number of indicators (including patient health and well-being, safety, equity and access and clinical effectiveness) (Healthcare Commission 2008). These scores are used as a proxy for ‘process quality’, which has been shown to be an explanatory factor shaping levels of patient experience in a number of previous studies (Marley *et al.* 2004).

Lastly, to control for the possible impact of organizational and contextual factors several additional variables were included in the model. Firstly, the size of trusts was taken into account as measured by the number of beds (Salge 2011; Pérotin *et al.* 2013; Veronesi *et al.* 2013). This is in line with the extant research, which suggests that patient experience tends to be worse in larger organizations (Pink *et al.* 2003; Sjetne *et al.* 2007). A further control was to differentiate between teaching and non-teaching hospitals on the grounds that the reputation and prestige enjoyed by the former may influence patient evaluations of services (Pink *et al.* 2003; Raleigh *et al.* 2012). The location of the trusts was also taken into consideration with dummies that matched the ten regions in which the English NHS is divided (Pérotin *et al.* 2013; Veronesi *et al.* 2013).

Empirical approach

Our empirical model of patient experience can be represented through the following estimation equation:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 Z_{it} + \beta_3 B_{it} + \varepsilon_i \quad (1)$$

where Y_{it} is the dependent variable patient experience score of hospital, i , in year t ; X_{it} is a vector of i^{th} hospital level explanatory variables related to the ratio clinical directors on board and the organizational status at time t ; Z_{it} is the hospital level control variables for hospital, i , at time t ; B_{it} is board level control variables for hospital, i , at time t ; α is the constant; β_1 , β_2 , β_3 are vectors of the parameters to be estimated; and ε_{it} is the remaining error term.

To avoid the possibility of having the number of explanatory variables exceeding the degrees of freedom required to model the relationship, we used time series cross-sectional data with trust-year cases, which increases the number of observations and the degree of freedom and therefore improves the efficiency of the parameter estimates. Pooling the data in a time series cross-sectional design may violate the assumptions of Ordinary Least Squares (OLS) estimations regarding the error process - all the errors should have the same variance (homoscedasticity) and be independent from each other. For this reason, we used Panel Corrected Standard Errors (PCSEs) to deal with possible 'contemporaneous correlation' of the errors - that is, being correlated across trusts within the same time period - and 'heteroscedasticity', having unequal variances across different subsets of hospitals (Beck and Katz 1996).

When a time series cross-sectional design is employed, the error terms may not be independent among different time periods (leading to a risk of serial correlation) (Hicks 1994). This means that for each individual trust the association between independent and dependent variables in the last year of analysis could be driven by (or at least being correlated with) the relationship between variables in the previous year and so forth. PCSEs estimations were therefore employed with lagged dependent variables and Prais-Winsten GLS

(Generalized Least Square) method where the errors are assumed to follow a first order autoregressive process, specific to each trust (Beck and Katz 1995).

Various combinations of explanatory and control variables were tested within our empirical model (1) specification. In Table 1, the first set of estimations investigates the effect the percentage of clinical directors on the board and the organizational status on the six dependent variables previously described (CQC All Round plus the other five domains). In Table 2, we expand on the first set of results by looking at the statistical impact of having an increasing number of clinicians on the board for the experience of patients. Given that every trust is required to have at least one medical director and one nurse director on the board, having two clinical directors on the board was employed as the reference group. Stage two of our analysis is then reported in Table 3. This looks specifically at the interaction between our two main explanatory variables and the dependent variable All Round patient experience. We also ran estimations for each of the five individual domains.

Robustness Analyses

A number of estimation techniques were adopted to check the consistency of the significance of the independent and control variables on All Round patient experience. First, OLS estimations were carried out using year dummies. To account for possible correlation of errors in the time series, the Feasible Generalized Least Squares (FGLS) estimation technique was employed as it uses an estimate assuming heteroscedastic error structure with no cross-sectional correlation of the variance-covariance matrix of the errors (Kmenta 1986). Second, fixed-effects estimations were employed against the possibility of an omitted variables bias like trust level unobserved time-invariant characteristics - such as culture, age of the facilities, resources- as well as unobserved patient characteristics – say if certain types of

patients are more likely to be referred to certain hospitals. We also performed random-effects analysis where the study's sample is regarded as a random sample from a larger population with an assumption that the variation across trusts is random and uncorrelated with the independent variable. Lastly, we addressed a concern that having clinical directors on boards might also have been affected by past patient experience scores, basically an issue of reverse causality. Arellano-Bover/Blundell-Bond dynamic estimations were consequently used to treat the percentage of clinical directors as endogenous in the model estimation. In what follows we report the results of our analysis in relation to the two central research questions outlined earlier.

Results

Effects of clinical board participation on patient experience

Starting with the first question about the impact of clinical participation at board level Table 1 presents the results of the PCSEs estimates on the CQC domains. All Round estimates showed significant positive effects of the percentage of clinical directors on the overall patient experience scores ($\beta=0.021$). This means that increases in the percentage of clinical directors on trust boards appear to have direct implications for All Round patient experience scores. The remaining columns in Table 1 display the estimates for different experience domains as dependent variables. The effect of the percentage of clinical directors on the board was significant and positive on the scores in the Coordination, Information, and Comfort patient experience categories. There was however no statistically significant association with the scores in the Access and Relationships categories. The non-significance here might be explained by the fact that all trusts in our sample received fairly high scores, with relatively smaller standard deviation on these two domains (in the mid 80s scores for

both indexes whereas the average scores for Coordination and Information were in the mid 60s and Comfort in the high 70s).

Insert Table 1 here

Looking at the effect of clinical leadership on patient experience in more detail, Table 2 reports the statistical impact of an increase in the number of clinical directors on boards. Here, boards with two clinical directors (one medical director and one nurse director), which is the statutory requirement, constituted the reference group. The estimations suggest that having three clinical directors rather than two does not seem to make a significant difference regarding patient experience. However, having four clinical directors compared to two was found to significantly increase the All Round patient experience scores ($\beta=0.483$). Having five or more clinical directors instead of two had an even greater significant positive impact on experience scores reflected in the coefficient of the estimates ($\beta=0.838$). Comparable results are obtained for Coordination, Information, and Comfort patient experience categories.

Insert Table 2 here

Consistent with the predictions of critical mass theory, the analysis reported in Table 2 shows that clinical representation on the governing boards of hospital trusts has a positive effect on patient experience. This, however, is only the case when the numbers rise above the default position of one medical and one nurse director. Specifically, the impact of clinical involvement in the boardroom increases markedly once a threshold (or critical mass) of 30%

of board members is reached (in our case 4 or more clinical directors out of 12 – the board average size).

Controls

As reported in Table 1, trusts with larger boards and with a higher percentage of non-executive directors were more likely to achieve more positive experience scores. Confirming the results of previous studies (Pink *et al.* 2003; Sjetne *et al.* 2007), we also found that the trust size seemed to impact negatively on patient experience, whereas location (e.g. London area) had no impact. Being a teaching trust appeared to have a positive effect on patients' views of the care provided. This confirms the findings of some previous studies (Pink *et al.* 2003; Raleigh *et al.* 2012), but appears to disconfirm others (Sjetne *et al.* 2007), which suggest that reputation is not important. Predictably, higher levels of activity in the trust measured by case load and percentage of bed occupancy did have a negative impact on the experience of patients. As expected, our analysis revealed a positive association between service quality and patient experience, as the trusts which achieved the highest CQC scores (excellent) in relation to the quality of the service provided (and the financial management of resources) also received more positive feedback from their patients.

The impact of Foundation Trust status

Turning to our second research question, we first looked at whether organizational status (used as a proxy for greater formal autonomy), on its own, had any impact on patient experience scores. Here, the results of the PCSEs estimates (see Table 1) did *not* reveal any statistically significant relationship with the All Round score nor with the Coordination, Information, Relationships and Comfort patient experience categories. The only statistically significant finding was a negative relationship between FT status and access score. The

importance of this finding is that it runs against other studies which consistently suggest that FT's tend to have better service outcomes than non FTs (Verzulli *et al.* 2011; Raleigh *et al.* 2012).

Having established that greater organizational autonomy alone does not ensure higher patient experience scores, we explored the link between FT status and clinical board participation on outcomes. Table 3 displays the PCSEs estimates containing the interaction between organization status and the percentage of clinical directors. Although the impact of the percentage of clinical directors on All Round patient experience was already found to be significant and positive in Table 1, the results reported in Table 3 Model-1 suggest that the significant relationship vanishes if the trust is *not* a FT. Essentially, the interaction effect highlights how the positive impact of clinical leadership on the experience of patients appears to only be felt when also supported by the greater autonomy and room for manoeuvre of FTs. This key finding is further supported when running the regression analysis not only with the interaction term, but also controlling for the specialism (e.g. being a specialist orthopaedic centre, a children's hospital and so forth) of trusts. As shown in Table 3 Model-2, specialist status not only appears to positively and significantly impact on patient experience scores, but also increases the statistical significance of the combined effect of clinical leadership and organizational autonomy.

Insert Table 3 here

Robustness Analyses

To check the consistency of our regression analysis we carried out a number of further estimation techniques within our empirical model (1) specification. These robustness tests

confirmed the significance of the positive effect of the percentage of clinical directors and the lack of statistically significant impact of organizational status on patient experience scores (see Table 4 reporting the results for All Round patient experience scores). Specifically, the results of OLS, FGLS, Random-effects, Fixed-effects, and Arellano-Bover/Blundell-Bond estimations seem to confirm that the impact of the percentage of clinical directors on the board was positive and significantly related to All Round patient experience scores in all estimations gathered. Similarly, the positive and significant impact of clinical leadership was confirmed for three (Coordination, Information and Comfort) out of five of the individual CQC domains. On the other hand, organization status was confirmed as not significant for all six dependent variables. We also controlled for possible hospital level unobserved time invariant covariates in our fixed effects model.

Insert Table 4 here

The results of the regression analysis were identical when the Principal Component Analysis factors were employed as dependent variables as well as the three factors identified through Factor Analysis (for the sake of simplicity and brevity, results of PCA and FA are not presented here but are available on request). Furthermore, we obtained analogous results when running a more parsimonious specification of the empirical model. This included only variables exogenous to a greater presence of clinicians on boards such as trust location, severity of cases treated, teaching status and mean population age. Although PCSE estimations control for possible endogeneity issues, the omitted variables (case load, waiting time, percentage of bed occupancy and the quality and financial scores) could have potentially been affected by a greater presence of clinicians in strategic decision-making roles. Additionally, we wanted to conclusively gauge the impact of clinical leadership on

patient experience by excluding some of the factors related to the process quality of the care provided (see Marley *et al.* 2004) that can influence the perceptions of patients. Moreover, to rule out the possible influence of missing cases, the estimations were re-run using a balanced panel of 38 trusts covering the 4 years under investigation. Once again, qualitatively similar results to the ones found with the main empirical model were obtained. Finally, we controlled for the possibility that the impact of FT status would be progressively felt within a hospital trust. Here the findings were again confirmed when replacing the dummy variable for FT status with the number of years a trust had been a FT.

Concluding discussion

This paper aimed to explore the impact of greater clinical leadership in strategic decision-making on organizational performance, and the possible moderating effect of recent changes in the governance of public hospitals. Our findings contribute to debates on this topic in a number of ways.

First, the study finds a positive relationship between greater clinical participation on hospital boards and patient experience. While this result is confirmatory of other studies focusing on hospital performance (Molinari *et al.* 1995; Jiang *et al.* 2009; Goodall 2011; Veronesi *et al.* 2013), it also represents an important advance. To date previous work has not focused on patient experience as an outcome measure even though it is arguably a better indicator of patient centred care than government performance tables and other indicators of clinical quality (Mannion *et al.* 2005). Consistent with the predictions of critical mass theory our findings also suggest that it is only when the representation of a particular sub group (in our

case, clinicians) reaches a certain point that it will be able to challenge the status quo and have an impact on board performance (Torchia *et al.* 2011; Joecks *et al.* 2013).

Second, our findings suggest that this positive impact of clinical leadership on care outcomes is more dependent on organisational conditions than previously assumed. In particular, they highlight the critical importance of recent changes in the governance of public hospitals (Eeckloo *et al.* 2004; Saltman *et al.* 2011), characterised in the English NHS by the move to FT status. Contrary to previous studies (Raleigh *et al.* 2012) we find that FT status, in itself, has no impact on service outcomes (at least not for patient experience).. However, our results do find that in those FTs with more clinical professionals on their boards, patient experience outcomes are higher.

One consequence of these findings is that in future far greater attention needs to be given to wider organisational conditions that might shape the nature and impact of clinical participation in board level decision-making. In particular, it seems that where boards have been granted increased formal autonomy, this is helping to facilitate greater clinical influence. From the data reported in this paper it is not possible to explain precisely *why* this is happening. One possibility, as suggested earlier, is that – notwithstanding constraints on autonomy (Exworthy *et al.* 2011) – some FT boards have become more willing to innovate with clinically led policies aimed at improving patient experience. This in turn could have much to do with the cultural dynamics of boards. Indeed, it may be the case that FTs with stronger clinical representation at senior levels have moved closer to a ‘developmental culture’ characterised by a ‘greater concern for clinical innovation and advancement and clinical teams being given greater freedoms and responsibilities’ (Jacobs *et al.* 2013; p. 123).

When drawing these conclusions a number of caveats and areas for future work should be noted. First, as we have suggested already, more work is needed to understand why clinical involvement at board level in FTs is having positive consequences for patient experience. There is obvious scope here for qualitative research to better understand the dynamics of board level decision-making and the role that clinicians play. This work might also tease out the specific impact of different clinical backgrounds (nursing, allied health professionals) and the importance (or not) of other organisational conditions, such as slack resources and levels of rank and file clinical engagement.

Further work would also be useful to explore how far these links between autonomy and clinical participation in strategic decision-making apply in other national contexts. As we noted earlier, across Europe there have been moves ‘to make public hospitals semi-autonomous, with their own supervisory board and with considerable independence in decision-making’ (Saltman *et al.* 2011; p. 7). This fact could mean that similar dynamics will be apparent to those observed in the English NHS. However, this is also open to question given qualitatively different governance arrangements in the public hospital sectors of many European countries (Kirkpatrick *et al.* 2013). Different tiers of local and regional government may also have consequences for the capacity of hospital boards to exercise autonomy, even greater than those observed in the English NHS (Saltman *et al.* 2011).

Notwithstanding these caveats, the findings reported here have important implications for policy and research. Where policy is concerned, they further highlight the benefits (in terms of patient centred care) of extending clinical participation in strategic decision-making. In terms of research this paper also breaks new ground, illustrating the significance of organisational conditions (increased autonomy) in shaping the nature and outcomes of

clinical leadership. In particular our results suggest that while extending clinical leadership ‘from ward to board’ (Ham *et al.* 2011) may be a necessary condition for transformative change in health service delivery, it is probably not sufficient, at least not where the goal of patient centred care is concerned.

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TABLE 1 *Coefficients of Panel Corrected Standard Errors (PCSEs) estimations of patient experience using percentage of clinical directors with 99 trusts and 272 trust-year cases*

Variable	Dependent Variable					
	All Round	Access	Coordination	Information	Relationships	Comfort
Clinical Directors (%)	0.021***(0.005)	-0.008 (0.019)	0.025***(0.009)	0.052***(0.015)	0.008 (0.009)	0.040***(0.009)
Organization Status	-0.105 (0.241)	-0.367***(0.142)	-0.438 (0.281)	0.295 (0.294)	-0.327 (0.210)	0.134 (0.166)
CEO-Clinical	0.032 (0.131)	1.429***(0.472)	-0.494 (0.634)	-0.474***(0.105)	0.059 (0.296)	-0.060 (0.084)
CHAIR-Clinical	-0.267 (0.167)	-0.043 (0.331)	-0.318** (0.127)	-0.842 (0.631)	-0.134 (0.211)	-0.577***(0.132)
Board Controls						
Number of Directors	0.020* (0.011)	0.044 (0.040)	0.108* (0.056)	-0.188***(0.019)	-0.067***(0.025)	-0.040 (0.066)
Independent Directors (%)	0.037***(0.005)	0.017* (0.009)	0.045***(0.009)	0.015 (0.020)	0.008 (0.009)	0.050***(0.011)
Female Directors (%)	-0.005***(0.002)	-0.021***(0.005)	-0.002 (0.003)	-0.003 (0.004)	-0.007 (0.006)	-0.002 (0.005)
Hospital Controls						
Organization Size	-0.001***(0.000)	-0.001***(0.000)	-0.001***(0.000)	-0.001***(0.000)	-0.001***(0.000)	-0.001***(0.000)
Case Load	-0.006* (0.004)	0.009***(0.003)	-0.023* (0.013)	-0.003 (0.007)	-0.017***(0.005)	-0.009***(0.002)
Population Age	-0.001 (0.011)	0.033***(0.011)	-0.025** (0.011)	0.049* (0.027)	0.016 (0.024)	0.007** (0.003)
Waiting Time	-0.022***(0.004)	-0.020***(0.008)	-0.011***(0.003)	-0.036***(0.008)	-0.002 (0.004)	-0.017***(0.004)
Severity of Cases	-0.044 (0.061)	0.058 (0.072)	-0.080* (0.040)	-0.038 (0.027)	-0.031 (0.019)	-0.112* (0.061)
Bed Occupancy (%)	-0.028***(0.010)	-0.081***(0.017)	-0.048***(0.010)	-0.056** (0.026)	-0.050***(0.017)	-0.036***(0.011)
Quality - Excellent	0.196* (0.119)	0.452** (0.217)	0.833***(0.169)	1.188***(0.391)	0.248***(0.065)	-0.230* (0.121)
Financial Man. - Excellent	0.307* (0.184)	0.790***(0.073)	0.229 (0.163)	0.473 (0.347)	0.626***(0.140)	0.253***(0.042)
Organization Reputation	0.686***(0.338)	0.315***(0.082)	0.291* (0.155)	0.772***(0.119)	0.154 (0.194)	0.244 (0.151)
Regional Dummies	YES	YES	YES	YES	YES	YES
No. of observations	232	232	232	232	232	232
Wald chi2	14.74***	116.40***	12.81***	29.29***	153.09***	9.88**

Notes: * = Significant at the 10% level (p<0.10) ** = Significant at the 5% level (p<0.05) *** = Significant at the 1% level (p<0.01). Standard Errors in brackets. Regional dummies are omitted for space reasons. All estimations include a constant and first lags of dependent variables.

TABLE 2 *Coefficients of Panel Corrected Standard Errors (PCSEs) estimations of patient experience, statistical impact of an increase in the number of clinical directors on boards with 99 trusts and 272 trust-year cases*

No. of Clinical Directors	Dependent Variable					
	All Round	Access	Coordination	Information	Relationships	Comfort
2 (= reference)						
3 Clinical Directors	-0.040 (0.134)	-0.098 (0.143)	0.384**(0.188)	-0.093 (0.349)	-0.499 (0.315)	-0.050 (0.121)
4 Clinical Directors	0.483***(0.182)	0.271 (0.357)	1.322***(0.080)	1.382***(0.220)	0.044 (0.125)	0.348 (0.256)
5 or more Clinical Directors	0.838***(0.170)	-0.664 (0.525)	1.285**(0.619)	1.701***(0.417)	0.274 (0.316)	1.225***(0.186)
No. of observations	232	232	232	232	232	232
Wald chi2	46.80***	36.33***	7.34**	29.29***	1.36	16.38***

Notes: *** = Significant at the 1% level ($p < 0.01$). Standard Errors in brackets. Estimations include the same board and hospital control variables, regional dummies, a constant and first lags of dependent variables as in Table 1.

TABLE 3 *Coefficients of Panel Corrected Standard Errors (PCSEs) estimations of patient experience, interactions between percentage of clinical directors on boards and organization status with 99 trusts and 272 trust-year cases*

Variable	Model-1	Model-2
Clinical Directors (%)	-0.005 (0.014)	-0.024 (0.018)
Foundation Trust	-1.135 (0.706)	-1.215 (0.790)
Clinical Directors (%) × Foundation Trust	0.041**(0.023)	0.051***(0.019)
Specialist Trust		3.480***(0.241)
No. of observations	232	232
Wald chi2	16.41***	7.27**

Notes: ** = Significant at the 5% level (p<0.05) *** = Significant at the 1% level (p<0.01). Standard Errors in brackets. The dependent variable is ALL ROUND patient experience in both models. Estimations include the same board and hospital control variables, regional dummies, a constant and first lag of dependent variable as in Table 1.

TABLE 4 *Robustness Analysis - Coefficients of estimations of patient experience employing various estimation techniques and using percentage of clinical directors with 99 trusts and 272 trust-year cases*

Variable	PCSE	OLS	FGLS	GLS Random-Effects	Fixed-Effects	Arellano-Bover/ Blundell-Bond
Clinical Directors (%)	0.021***(0.005)	0.084***(0.025)	0.080***(0.011)	0.074***(0.022)	0.071***(0.024)	0.232** (0.105)
CEO-Clinical	0.032 (0.131)	-0.233 (0.562)	-0.639***(0.225)	-0.192 (0.482)	-0.101 (0.536)	-1.139 (1.048)
CHAIR-Clinical	-0.267 (0.167)	-1.760** (0.685)	-1.354***(0.170)	-1.524***(0.589)	-1.445** (0.631)	-4.727***(1.512)
Board Controls						
Number of Directors	0.020* (0.011)	-0.027 (0.114)	0.032 (0.038)	0.028 (0.079)	0.047 (0.081)	0.262 (0.296)
Independent Directors (%)	0.037***(0.005)	0.037 (0.032)	0.032***(0.009)	0.012 (0.020)	0.006 (0.019)	-0.025 (0.033)
Female Directors (%)	-0.005*** (0.002)	-0.004 (0.014)	0.009 (0.006)	0.008 (0.012)	0.008 (0.013)	-0.013 (0.026)
Hospital Controls						
Organization Size	-0.001***(0.000)	-0.002***(0.001)	-0.002***(0.000)	-0.002***(0.001)	-0.000 (0.002)	0.001 (0.003)
Case Load	-0.006* (0.004)	-0.031* (0.018)	-0.000 (0.008)	0.002 (0.010)	0.010 (0.010)	0.085 (0.054)
Population Age	-0.001 (0.011)	0.024 (0.034)	0.003 (0.017)	0.000 (0.050)	0.035 (0.140)	-0.540* (0.282)
Waiting Time	-0.022***(0.004)	-0.021* (0.013)	-0.005 (0.004)	-0.005 (0.007)	-0.000 (0.008)	-0.008 (0.012)
Severity of Cases	-0.044 (0.061)	-0.151 (0.106)	-0.105*** (0.036)	0.119 (0.140)	-0.128 (0.301)	0.425 (0.572)
Bed Occupancy (%)	-0.028***(0.010)	-0.129 (0.032)	-0.136*** (0.011)	-0.033 (0.029)	0.033 (0.033)	0.034 (0.052)
Quality - Excellent	0.196* (0.119)	1.714*** (0.389)	0.877*** (0.136)	0.046 (0.215)	-0.129 (0.210)	0.290 (0.311)
Financial Man. - Excellent	0.307* (0.184)	1.256** (0.493)	0.064 (0.184)	0.164 (0.289)	-0.072 (0.259)	-0.159 (0.524)
Organization Status	-0.105 (0.241)	-0.301 (0.557)	-0.139 (0.240)	-0.076 (0.409)	omitted	omitted
Organization Reputation	0.686*** (0.338)	-0.625 (0.422)	0.272 (0.233)	-0.371 (0.648)	omitted	omitted
Regional Dummies	YES	YES	YES	YES	omitted	omitted
No. of observations	232	272	251	272	272	172
Wald chi2/R ²	14.74***	0.43	3318.24***	54.13***	0.00	24.45*

Notes: * = Significant at the 10% level (p<0.10) ** = Significant at the 5% level (p<0.05) *** = Significant at the 1% level (p<0.01). Standard Errors in brackets. Regional dummies and constants are omitted for space reasons. The dependent variable is ALL ROUND patient experience in all models. OLS estimation also includes year dummies. PCSE estimation includes first lag of the dependent variable. R² is presented for OLS and fixed-effects estimations.

APPENDIX

NHS Inpatient Survey questions included in the Care Quality Commission domains

Access and waiting domain

Q11: Was your admission date change by the hospital?

Q9: How do you feel about the length of time you were on the waiting list before your admission to hospital?

Q12: From the time you arrived at the hospital, did you feel that you had to wait a long time to get to a bed on a ward?

Safe, high quality, coordinate care

Q38: Sometimes, a member of staff will say one thing and another will say something quite different. Did this happen to you?

Q57: On the day you left the hospital, was your discharge delayed by any reason?

Q65: Did any member of staff tell you about any danger signals you should watch for after you went home?

Better information, more choice

Q39: Were you involved as much as you wanted to be in decisions made about your care and treatment?

Q61: Did a member of staff explain the purposes of the medications you were to take at home in a way you could understand?

Q62: Did a member of staff tell you about medication side effects to watch for when you went home?

Building relationships

Q29: When you had important questions to ask the doctor, did you get answers that you could understand?

Q31: Did doctors talk in front you as if you weren't there?

Q33: When you had important questions to ask a nurse, did you get answers that you could understand?

Q35: Did nurses talk in front of you as if you weren't there?

Clean, comfortable, friendly place to be

Q20: Were you have bothered by noise at night from other patients?

Q21: Were you have bothered by noise at night from hospital staff?

Q22: In your opinion, how clean was the hospital room or ward that you were in?

Q26: How would you rate the hospital food?

Q44: Were you given enough privacy when being examined or treated?

Q69: Did you feel you were treated with respect and dignity while you were in hospital?

Q46: Do you think the hospital staff did everything they could to help control your pain?

For more information on the NHS Inpatient Survey see <http://www.nhssurveys.org/>.