The risks to care quality and staff wellbeing of an NHS system under pressure

31 January 2018

Steve Sizmur
Picker

Veena Raleigh
The King's Fund

www.picker.org

Picker

Picker is an international charity dedicated to ensuring the highest quality health and social care for all, always. We are here to:

- Influence policy and practice so that health and social care systems are always centred around people's needs and preferences.
- Inspire the delivery of the highest quality care, developing tools and services which enable all experiences to be better understood.
- Empower those working in health and social care to improve experiences by effectively measuring, and acting upon, people's feedback.

Published by and available from:
Picker Institute Europe
Buxton Court
3 West Way
Oxford,
OX2 0JB
England

Tel: 01865 208100
Fax: 01865 208101

Email: info@pickereurope.ac.uk
Website: www.picker.org

Registered Charity in England and Wales: 1081688
Registered Charity in Scotland: SC045048
Company Limited by Registered Guarantee No 3908160

Picker Institute Europe has UKAS accredited certification for ISO20252: 2012 (GB08/74322) and ISO27001:2013 (GB10/80275). Picker is registered under the Data Protection Act 1998 (Z4942556). This research conforms to the Market Research Society's Code of Practice.

Contents

The risks to care quality and staff wellbeing of an NHS system under pressure

Steve Sizmur & Veena Raleigh

Summary

There is a body of evidence linking staff wellbeing to patient outcomes and experience. However, work pressures and staff shortages in the NHS are escalating, and likely to worsen given financial constraints and the probable impact of UK's withdrawal from the EU. Financial and demand pressures on the NHS are mounting and declining standards of performance are widely reported. Staff shortages, work pressures, turnover and expenditure on agency staff are escalating. The UK is below the Organisation for Economic Co-operation and Development (OECD) average for doctors and nurses per head of population, and problems in recruitment and retention are likely to worsen. The UK also has fewer acute beds relative to its population than almost any other comparable health system. In these circumstances, the risks to patient care are self-evident and it is important to monitor staff wellbeing and how it is impacting on patients.

Our analysis shows several findings that are significant in the current context. We found that staff experience was associated with sickness absence rates, spend on agency staff and staffing levels, indicating that staff wellbeing is impacted negatively by a workforce that is overstretched and supplemented by temporary staff. Patient experience was also negatively associated with workforce factors: higher spend on agency staff, fewer doctors and especially fewer nurses per bed, and bed occupancy. These findings are unsurprising. Use of agency staff provides less continuity and stability of care, and inadequate staffing and high bed occupancy will impact negatively on the quality of inpatient care. That these associations with workforce factors come through in patients' feedback is noteworthy, as it signals the risks to the quality of care for patients given the current widely-reported crises in NHS staffing. Staff-reported experience was correlated with patient feedback in several areas, notably between staff perceptions of care quality and patient experience, indicating that staff and patients' perceptions about quality of care are consistent.

Our findings highlight the importance of reducing dependency on agency staff, not just as a cost-cutting measure, but also from a quality of care perspective. Likewise, patients' feedback shows the importance of reducing the pressure on beds and ensuring adequate staffing for improving quality of patient care. Associations between workforce factors, bed availability, staff and patient experience resonate with other research. They suggest that the deepening crisis in NHS staffing and availability of beds could cause a deterioration in the quality of care. The findings have significance for policy makers and managers in terms of the urgent need to address the workforce and NHS capacity issues.

Introduction

A wealth of evidence shows that organisational performance is critically dependent on the health and wellbeing of the staff employed. While this applies in all sectors, including commercial, the implications are arguably most profound in health care given the potential impact of organisational performance on patients' outcomes and experiences. There is a large body of research showing that the wellbeing, experience and outcomes of staff impact on the quality of care and experience and outcomes for patients:

Several studies have shown associations between staffing levels and patient outcomes.[i] Leadership styles, management practices and workload are predictive of staff satisfaction and engagement, which in turn impact on staff wellbeing and behaviour e.g. burnout, stress, job performance, errors, work relationships, absenteeism and turnover.[ii] [iii] A review by West et al found significant associations between several NHS staff experience variables and organisational outcomes; in particular, staff engagement (measured by motivation, involvement and advocacy) in NHS hospitals was linked to patient satisfaction, patient mortality, and overall performance indicators from the CQC's Annual Health Check, as well as being strongly linked with staff absenteeism.[iv]

Staff experience and wellbeing (such as burnout) are associated with quality, safety and patient outcomes in many countries and care settings.[v] Moreover, staff outcomes such as absence and turnover are related to patient outcomes,[vi][vii] and are in turn affected by work practices and engagement.[viii] Staff engagement in particular is reported to be the most consistent predictor of patient and staff outcomes, often because it is a mediating mechanism between other workforce predictors and outcomes.[ix] Staff experience is also associated with patient reported experience, with staff feedback on cleanliness, managerial support, witnessing and reporting of errors, working extra hours and stress all being significant predictors.[x] [xi]

Overall, the research shows that the quality of care provided is predicted by the experiences and engagement of healthcare workers and the support they receive from colleagues and the organisation more widely.[xii]

While the research, most of which is cross-sectional, doesn't always demonstrate causality, the results point to the importance of the health and wellbeing of staff as a critical factor in ensuring high quality care for patients.

This summary of the research evidence on the direct and indirect impact of staff health, wellbeing and engagement on patient care and outcomes highlights the need for continuing review of how NHS staff are faring – especially in the current environment. The unprecedented financial pressures the NHS is currently facing, the widely reported challenges of high vacancy levels and staff shortages, anecdotal reports of staff dissatisfaction with pay and work pressures, and the potentially negative impact on NHS staff numbers of the UK's decision to leave the European Union add to the urgency of a contemporaneous review, given the potentially deleterious impacts on the quality of care that patients receive.

In this report we examine:

- How does NHS staff experience vary with levels of staffing, sickness absence, spend on agency staff and bed occupancy in NHS hospitals, and is there an association with the size of trust?
- How does patient experience vary with these same factors?
- What is the relationship between staff and patient perspectives on care?

The aim of this analysis is to provide some insights about the NHS workforce that are relevant in the context of contemporary issues facing the NHS, and which can impact on the experience of staff and patients, and potentially the quality of care. The scope of the study is limited by the data sources available. Nonetheless, using the data available, we explore several associations that are especially relevant in the current context.

This is a collaborative project between Picker and The King's Fund, for which we have not received any external funding.

Methods

Data sources

The analysis focuses on 134 NHS general acute trusts in England. Specialist trusts were excluded from the analysis because the specialist care they provide is atypical of acute trusts. Data relating to the experience of staff and patients at acute NHS trusts in England, and on workforce and contextual variables, were used for the analysis, matched as closely as possible in terms of the period to which the data refer. Specifically, the following publicly-available data sources were used for the analysis (see Appendix for details of data sources):

- NHS staff experience survey 2016
- NHS inpatient experience survey 2016
- Number of doctors per occupied hospital bed August 2016
- Number of nurses per occupied hospital bed August 2016
- Spend on agency staff as a proportion of total pay (rankings) Q2-Q3 2016
- Staff sickness absence rates Q2-Q3 2016
- Proportion of beds occupied Q3 2016

We also considered the following contextual variables that reflect on trust size:

- Number of admissions Q3 2016
- Number of hospital beds Q3 2016

Box 1

NHS staff survey 2016: The following 23 items were selected for analysis, using the unweighted aggregated frequencies for acute hospital trusts (published in trust-level benchmark reports):
Q3c "I am able to do my job to a standard I am personally pleased with"
Q4e "I am able to meet all the conflicting demands on my time at work"
Q4g “There are enough staff at this organisation for me to do my job properly”
Q5b "The support I get from my immediate manager"
Q5c "The support I get from my work colleagues"
Q6a “I am satisfied with the quality of care I give to patients/service users”
Q6b “I feel that my role makes a difference to patients / service users”
Q6c “I am able to deliver the care I aspire to”
Q7f "My immediate manager takes a positive interest in my health and well-being"
Q7g "My immediate manager values my work"
Q9a "Does your organisation take positive action on health and well-being?"
Q9c "During the last 12 months have you felt unwell as a result of work related stress?"
Q9d "In the last three months have you ever come to work despite not feeling well enough to perform your duties?"
Q9e "Have you felt pressure from your manager to come to work?"
Q9f "Have you felt pressure from colleagues to come to work?"
Q20a "In the last 12 months, have you had an appraisal, annual review, development review, or Knowledge and Skills Framework (KSF) development review?"
Q21a “Care of patients / service users is my organisation's top priority”
Q21b "My organisation acts on concerns raised by patients/service users"
Q21c “I would recommend my organisation as a place to work”
Q21d “If a friend or relative needed treatment I would be happy with the standard of care provided by this organisation”
Q22b "I receive regular updates on patient/service user experience feedback"
Q22c "Feedback from patients/service users is used to make informed decisions"
Overall indicator of staff engagement derived from nine staff survey variables[1]

Box 2

NHS inpatient survey 2016: The following 19 items were selected for analysis, using the standardised benchmark scores for acute hospital trusts (published in trust-level benchmark reports):
Q9 "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?"
Q17 "In your opinion, how clean was the hospital room or ward that you were in?"
Q20 “Did you get enough help from staff to wash or keep yourself clean?”
Q24 “Did you get enough help from staff to eat your meals?”
Q25 "When you had important questions to ask a doctor, did you get answers that you could understand?"
Q26 "Did you have confidence and trust in the doctors treating you?"
Q28 "When you had important questions to ask a nurse, did you get answers that you could understand?"
Q29 "Did you have confidence and trust in the nurses treating you?"
Q31 “In your opinion, were there enough nurses on duty to care for you in hospital?”
Q32 "Did you know which nurse was in charge of looking after you?"
Q33 "In your opinion, did the members of staff caring for you work well together?"
Q34 "Sometimes in a hospital, a member of staff will say one thing and another will say something quite different. Did this happen to you?"
Q36 "Did you have confidence in the decisions made about your condition or treatment?"
Q38 "Did you find someone on the hospital staff to talk to about your worries and fears?"
Q39 "Do you feel you got enough emotional support from hospital staff during your stay?"
Q44 “How many minutes after you used the call button did it usually take before you got the help you needed?”
Q72 "Overall, did you feel you were treated with respect and dignity while you were in the hospital?"
Q73 "During your time in hospital did you feel well looked after by hospital staff?"
Q74 Overall rating of experience

[1] See: *Making Sense of your Staff Survey Data* document on NHS Staff Survey website (http://www.nhsstaffsurveys.com/Page/1006/Latest-Results/2016-Results/)

The staff survey items selected are those that reflect or could impact on the quality of inpatient care, either directly (e.g. work pressures) or indirectly (e.g. managerial support). The patient survey items selected are those that reflect aspects of the quality of care likely to be affected directly or indirectly by whether or not trusts have an adequate, well-trained and well-supported hospital workforce. The questions from the staff and patient surveys selected for analysis are shown in Boxes 1 & 2.

Method of analysis

We first examined the distribution of the variables across trusts and the Health Education England regions. Then we analysed associations between the workforce variables, and staff and patient experience. Trust-level data were analysed using Spearman's rank-order correlations between selected staff and patient experience variables on the one hand, and staffing levels, spend on agency staff, sickness absence and bed occupancy rates on the other. We also examined associations between the staff and patient experience variables. The correlation coefficients were examined to determine which were large enough to warrant consideration of the magnitude and direction of the relationship: correlation coefficients greater in magnitude than 0.3 and 0.5 respectively were considered to be of interest. We also examined associations with the number of admissions and number of beds as contextual variables, to see if trust size had a bearing on the results. The statistical analysis is constrained by the workforce data available at trust level, which is limited in scope and depth and does not support more sophisticated approaches.

Results

The key findings are summarised below as follows.

- Distribution of the variables across trusts and regions (Table 1)
- Associations between workforce variables and staff experience (Table 2)
- Associations between workforce variables and patient experience (Table 3)
- Associations between staff experience and patient experience (Table 4).

Distribution of the workforce variables and staff and patient experience responses

As background information, the distribution of the workforce variables is reported in Table 1. Sickness absence rates were evenly distributed across trusts. The large majority of trusts had occupancy rates above 85 per cent, with minimum occupancy of over 70 per cent. Staffing ratios showed a number of moderate outliers with relatively high numbers of doctors and nurses per bed. Spend on agency staff was available only as rankings and is not shown in the table.

Table 1: Distribution of workforce variables used in analyses

	Percentiles				
	Minimum	25	50	75	Maximum
Percentage sickness absence rate Q2-3 2016	2.5	3.6	4.1	4.4	5.5
Total beds % occupied	73	84	88	93	100
General & acute beds % occupied	78	87	91	94	100
Doctors per occupied bed	0.6	0.8	0.9	1.1	2.0
Nurses per occupied bed	1.3	1.7	2.0	2.4	4.8

There were some regional patterns in the distribution of workforce variables. Trusts in the North East and Wessex ranked relatively low on agency spend, and London trusts ranked in the middle to high end of the distribution. On the other hand, sickness absence rates were consistently lower in London trusts and generally higher in trusts in the north of England. The number of doctors per bed was relatively high in N.W. London and N. Central & E. London, but otherwise showed no marked regional differences. Nursing ratios followed a similar pattern. Bed occupancy rates were generally high and showed little regional variation.

The staff survey results did not show a consistent pattern of variation across regions. Staff in London trusts tended to respond relatively positively to a number of questions relating to quality of care, and were relatively negative regarding support from managers and colleagues, and stress related illness. Trusts in S.W. England and Yorkshire & Humber were frequently associated with lower ratings on staff survey questions, particularly patient-related items, but South West trusts were more positive about support from managers and colleagues.

In contrast, London trusts, particularly S. London and to a lesser extent N. Central & E. London, were associated with lower patient experience scores in a number of areas. Wessex, N.E. and S.W. England trusts were relatively positive on a number of measures.

Table 2: Correlations between workforce and staff survey variables

Survey item	Agency spend	Sickness absence	Total beds % occupied	General & acute % occupied	Doctors per bed	Nurses per bed
Q3c positive	-.10	-.10	-.09	-.07	-.05	-.03
Q4e positive	-.06	-.15	-.05	-.04	.01	-.07
Q4g positive	-.30	-.14	-.04	-.08	.09	.13
Q5b positive	-.35	-.23	-.10	-.11	.05	.04
Q5c positive	-.31	-.02	-.11	-.13	-.19	-.04
Q6a positive	-.12	-.41	-.04	-.03	.27	.19
Q6b positive	-.15	-.50	.02	.05	.36	.22
Q6c positive	-.04	-.43	.00	.02	.21	.05
Q7f positive	-.31	-.27	-.13	-.15	.12	.13
Q7g positive	-.37	-.36	-.11	-.14	.20	.16
Q9a positive	-.26	-.15	-.13	-.12	.02	.03
Q9c no	-.28	-.03	-.11	-.12	-.09	-.11
Q9d no	-.34	-.14	-.14	-.21	.27	.24
Q9e no	-.24	.04	-.14	-.16	.12	.31
Q9f no	-.33	.25	-.18	-.25	-.11	.18
Q20a positive	-.15	.10	-.06	-.03	-.12	.03
Q21a positive	-.24	-.35	-.04	-.05	.16	.02
Q21b positive	-.30	-.32	-.09	-.10	.14	.05
Q21c positive	-.38	-.28	-.07	-.07	.12	.03
Q21d positive	-.52	-.34	-.10	-.12	.28	.16
Q22b positive	-.05	-.19	-.23	-.24	.00	-.02
Q22c positive	-.08	-.37	-.09	-.11	.22	.05
Engagement score	.08	-.31	-.04	-.03	.01	-.05

Associations between workforce variables and staff experience

Correlation coefficients between workforce variables and staff experience are reported in Table 2.

The workforce variables showing the strongest association with staff experience were sickness absence rates and spend on agency staff.

Sickness absence rates were negatively associated with all but three of the 23 selected staff experience variables: staff reported experience was generally more negative in trusts where sickness absence rates were higher. The negative association with sickness absence rates was strongest for staff feedback to three questions relating to the quality of care they were able to provide to patients, to the organisation's prioritisation of patient care and to questions about acting on patient feedback. The proportions of staff happy with the standard of care that would be provided to a friend or relative were also lower in trusts where sickness absence rates were higher (Figure 1).

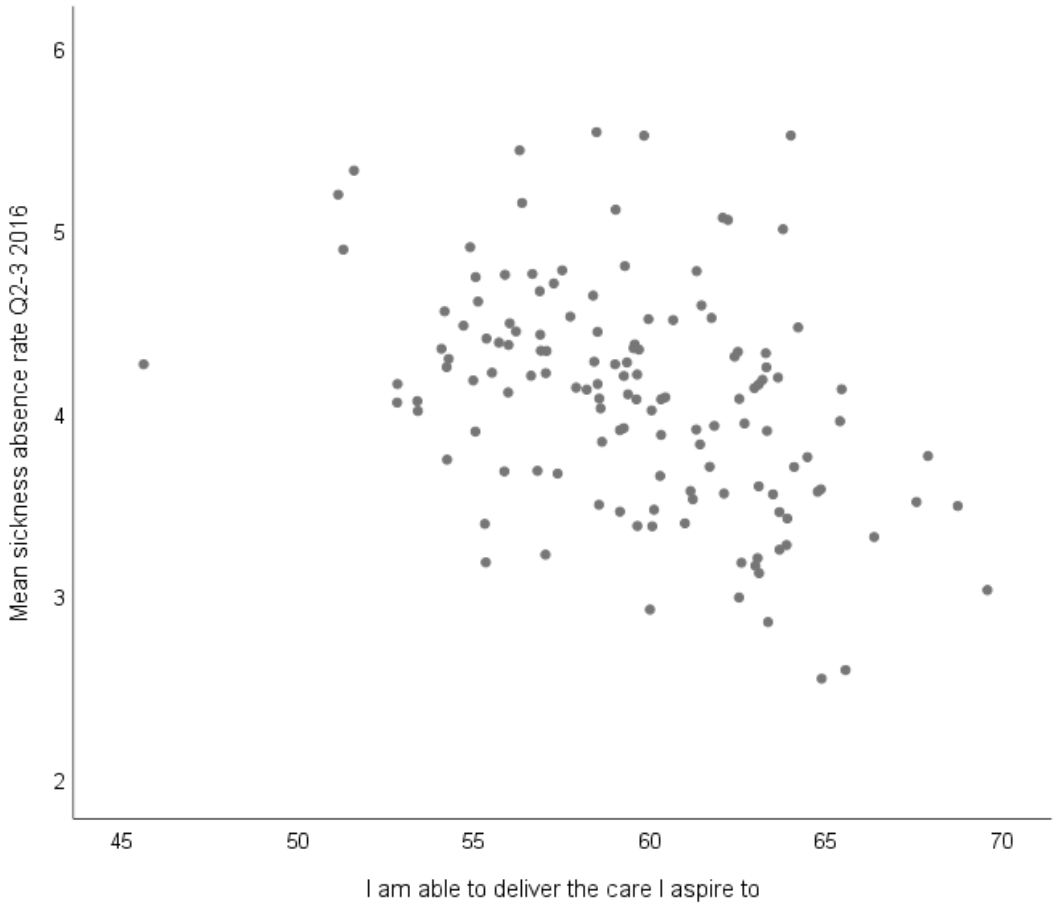

Figure 1: Relationship between sickness absence rates and staff ability to deliver the care they aspire to

Spend on agency staff was negatively associated with all but one of the 23 selected staff experience variables: staff reported experience was generally more negative in trusts where spend on agency staff was higher. The strongest negative association was observed for staff satisfaction with the standard of care provided by the organisation ("*If a friend or relative needed treatment I would be happy with the standard of care provided by this organisation*") (Figure 2). Staff feedback about action on patient feedback was also more negative in trusts with higher spend on agency staff. In trusts with higher spend on agency staff, lower proportions of staff also reported getting support from managers and colleagues, organisational interest in the health and wellbeing of staff, and (to a lesser extent) not feeling work related stress and pressures.

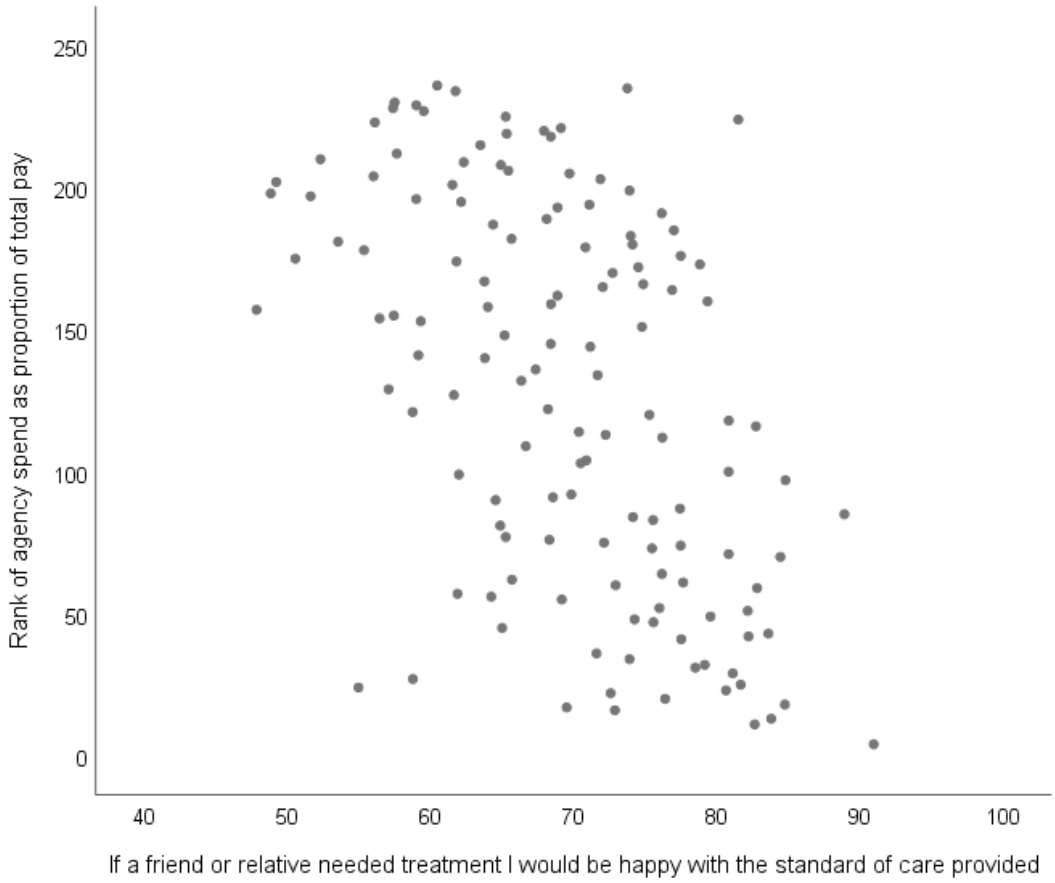

Figure 2: Relationship between spend on agency staff and staff satisfaction with standard of care at the trust

Staff at hospitals with more doctors and nurses per bed were more likely to be happy with the standard of care that would be provided to a friend (Figure 3) and in particular with feeling that their role made a difference to patients. Staff at hospitals with more nurses per bed were also less likely to report pressure from managers to come to work. Higher ratios of doctors and nurses to beds were associated, albeit weakly, with higher proportions of staff giving positive feedback about patient care.

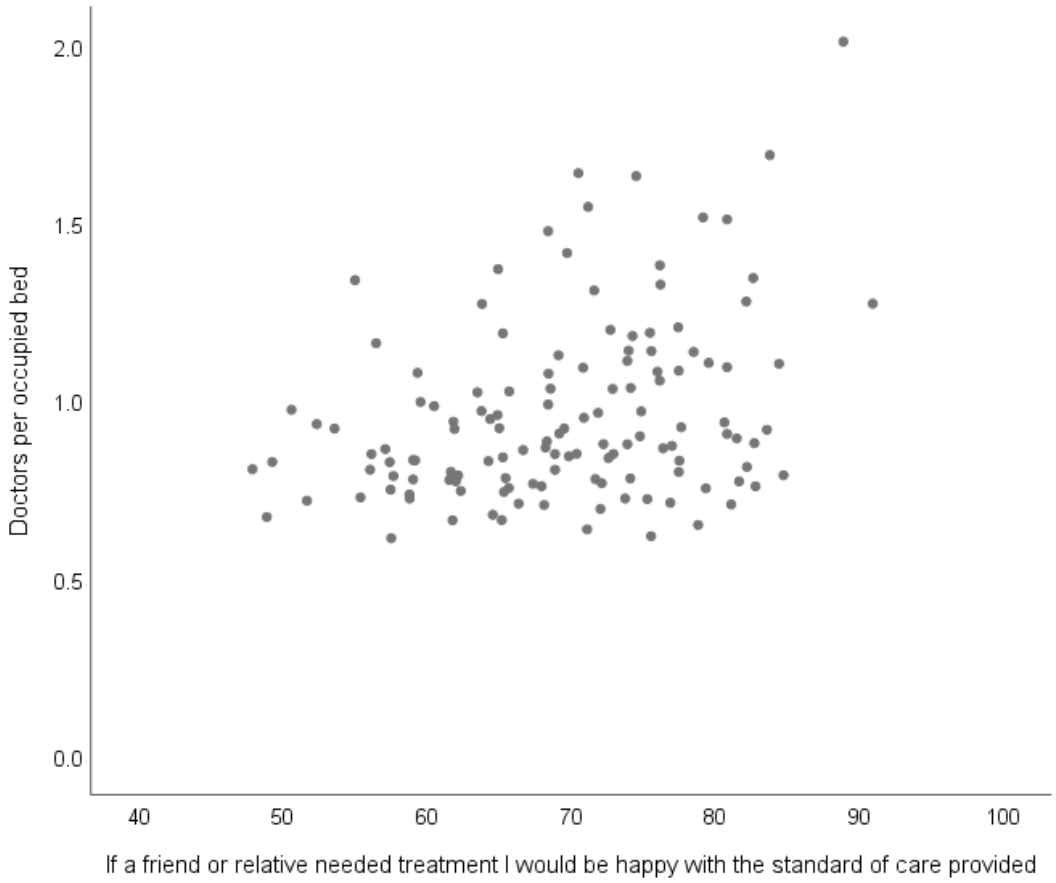

Figure 3: Relationship between the number of doctors per bed and staff satisfaction with the standard of care at the trust

Staff experience generally showed little association with bed availability and the proportions of beds occupied, the correlations being weak and inconsistent in direction. This could possibly be because bed occupancy rates were high across all trusts and showed limited variation (Table 1).

Staff experience was only weakly related to measures of hospital size as measured by the number of admissions.

Associations between workforce variables and patient experience

Correlation coefficients between workforce variables and patient experience are reported in Table 3.

Patient-reported feedback showed stronger associations with some of the staff variables (spend on agency staff, bed occupancy, number of doctors and nurses per bed) than the associations between staff-reported feedback and these staff variables. Overall, patient experience was most strongly associated with spend on agency staff and the numbers of nurses per occupied bed, followed by bed occupancy and the number of doctors per bed.

Table 3: Correlations between workforce and patient survey variables

Survey item	Agency spend	Sickness absence	Total beds % occupied	General & acute % occupied	Doctors per bed	Nurses per bed
Q9 score	-.42	-.10	-.27	-.27	.11	.21
Q17 score	-.31	.14	-.14	-.15	-.09	.10
Q20 score	-.44	.03	-.19	-.22	.09	.26
Q24 score	-.39	.01	-.18	-.21	-.03	.14
Q25 score	-.53	-.15	-.24	-.27	.32	.35
Q26 score	-.58	-.16	-.26	-.29	.35	.34
Q28 score	-.43	.11	-.31	-.33	.00	.23
Q29 score	-.45	.09	-.24	-.25	-.05	.17
Q31 score	-.41	-.20	-.25	-.26	.25	.40
Q32 score	-.29	-.01	-.21	-.25	.26	.31
Q33 score	-.51	.10	-.21	-.25	.03	.27
Q34 score	-.39	.04	-.28	-.29	-.06	.17
Q36 score	-.56	-.13	-.18	-.21	.32	.33
Q38 score	-.53	.06	-.24	-.25	.16	.29
Q39 score	-.41	.09	-.25	-.26	.07	.25
Q44 score	-.40	.15	-.31	-.34	.07	.37
Q72 score	-.49	-.12	-.22	-.25	.12	.22
Q73 score	-.45	-.02	-.23	-.26	.08	.23
Q74 score	-.51	-.07	-.25	-.26	.17	.26

All the 19 patient experience measures analysed were negatively associated with spend on agency staff: higher rates of spend on agency staff were consistently associated with poorer patient experience (Figure 4). Moreover, this association was strong in terms of the statistical measure used: the strength of the negative correlation exceeded -0.4 for 15 of the 19 patient survey items analysed, and for 6 items it exceeded -0.5. The negative relationships with spend on agency staff were strongest (correlation stronger than -0.5) for patient survey questions relating to: communicating with doctors, staff working well together; confidence and trust in doctors; confidence in decisions about care and treatment; finding someone to talk to about worries; and overall patient experience rating.

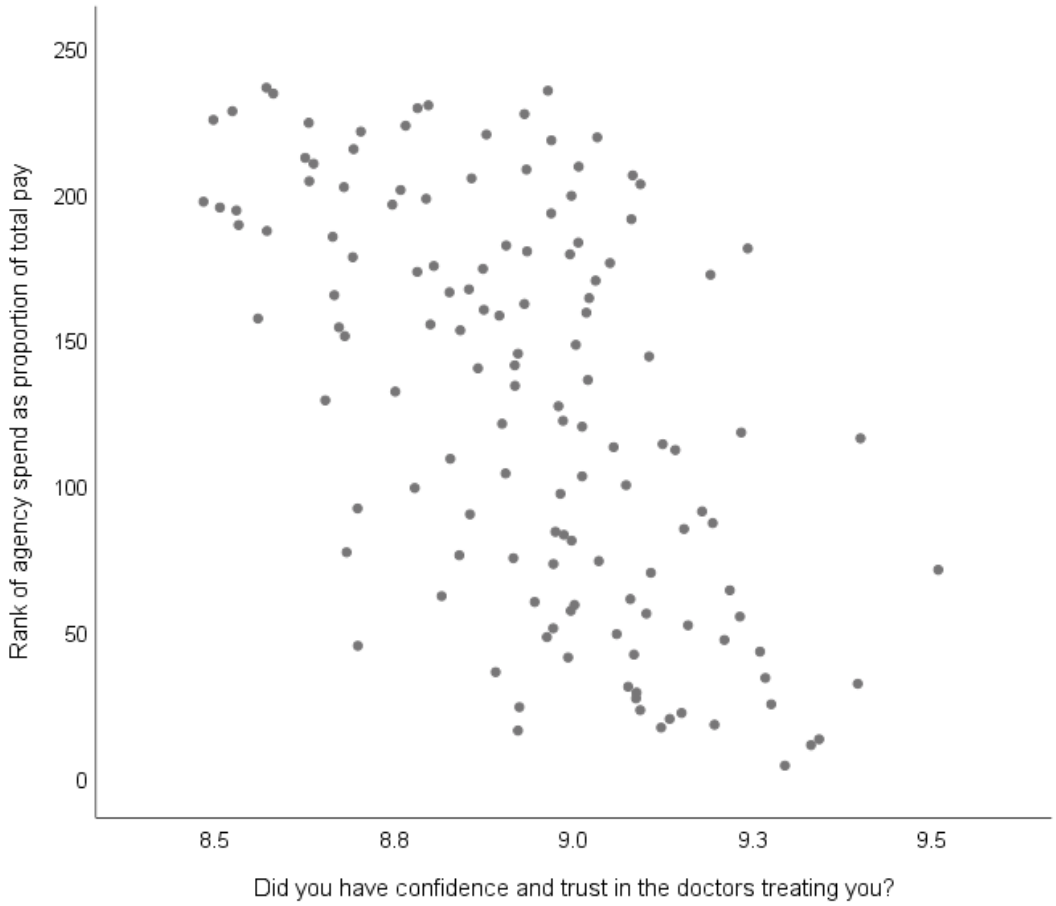

Figure 4: Relationship between agency spend and patients' confidence and trust in doctors

All the 19 patient experience measures analysed were positively associated with the number of nurses per occupied bed: patients at trusts with more nurses per bed reported a more positive experience. This association was moderate in terms of the statistical measure used: the correlation coefficients were greater than 0.3 for six of the 19 patient survey items analysed. The items that showed the strongest positive relationship between patient experience and the number of nurses per bed related to: enough nurses to provide care; knowing which nurse was responsible for care; communication with staff; staff working well together; confidence and trust in doctors; confidence in decisions about treatment and care; emotional support from staff; timeliness of response to call button. There was also a weaker positive relationship with reporting enough staff help to wash and keep clean; and finding someone to talk to about worries. The strongest positive association between the patient experience items and the number of nurses per bed was for patients reporting that there were enough nurses on duty (Figure 5).

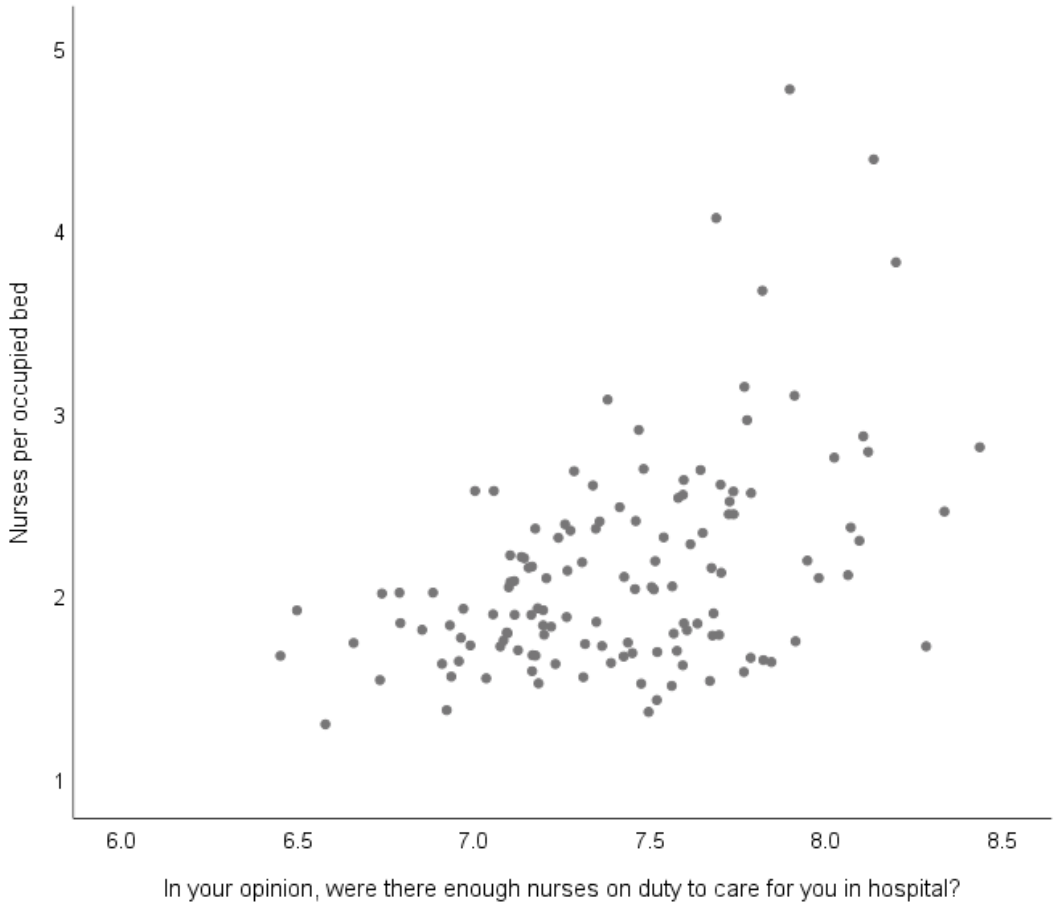

Figure 5: Relationship between the number of nurses per bed and patient perception of staffing adequacy

As with the number of nurses per occupied bed, most patient experience items showed a positive association with the number of doctors per occupied bed. However, the association was less strong: for 3 of the 19 patient survey items analysed the correlation exceeded 0.3. The number of doctors per bed showed the strongest positive association for patients responding that: they got comprehensible answers from doctors; they had confidence and trust in doctors; and they had confidence in decisions about care and treatment.

Higher bed occupancy rates were consistently associated with poorer patient experience. All 19 patient experience items showed a consistently negative association with bed occupancy, with correlation coefficients mostly between -0.2 and -0.4. The negative association with bed occupancy was strongest for patient feedback about: getting comprehensible answers from nurses; and timeliness of response to call buttons.

The 19 patient experience items mostly showed a negligible or weakly negative association with both the number of admissions and the number of beds available: patient experience tended to decline with increasing trust size as measured by the number of admissions and beds available. One patient question (about knowing who was in charge of their care) showed a weak positive relationship with trust size.

Patient experience items showed a weak and inconsistent relationship with staff sickness absence rates.

Associations between staff experience and patient experience

Correlations between staff and patient experience are reported in Table 4.

Staff-reported experience was correlated with patient feedback in a number of areas, notably between staff perceptions of patient care and patient experience. Staff responses to the question "*If a friend or relative needed treatment I would be happy with the standard of care provided*" showed consistent and strong positive associations with almost all the 19 patient survey items analysed: for eight items the correlation coefficients were in the range 0.5 to 0.7 and for another six exceeded 0.4. This was the strongest and most consistent association observed between staff and patient reported experience (Figure 6).

Table 4: Correlations between staff and patient survey variables

	Q9	Q17	Q20	Q24	Q25	Q26	Q28	Q29	Q31	Q32	Q33	Q34	Q36	Q38	Q39	Q44	Q72	Q73	Q74
Q3c	.06	.22	.02	-.06	.13	.17	.07	.06	.12	.01	.10	.09	.13	.09	.07	-.07	.15	.11	.12
Q4e	.00	.11	-.04	-.11	.04	.10	-.07	-.07	.10	.06	-.01	-.06	.05	.00	-.01	-.01	.04	.00	.04
Q4g	.20	.33	.22	.10	.23	.34	.19	.20	.33	.18	.29	.12	.32	.26	.21	.17	.33	.26	.34
Q5b	.30	.17	.20	.09	.26	.31	.22	.19	.24	.04	.21	.21	.28	.24	.18	.11	.31	.21	.22
Q5c	.29	.22	.23	.17	.24	.25	.30	.33	.25	-.09	.33	.35	.25	.25	.23	.15	.31	.29	.23
Q6a	.09	.03	-.05	-.15	.20	.19	-.01	-.05	.25	.06	.00	-.02	.16	.05	.02	-.09	.12	.06	.12
Q6b	.10	-.10	-.05	-.14	.23	.17	-.04	-.10	.27	.06	-.05	-.06	.18	.07	.00	-.17	.10	.02	.09
Q6c	.00	.01	-.09	-.16	.11	.12	-.11	-.13	.18	.03	-.06	-.10	.10	-.01	-.05	-.14	.07	-.01	.07
Q7f	.27	.15	.19	.11	.27	.30	.18	.19	.28	-.01	.24	.17	.29	.19	.14	.09	.32	.18	.23
Q7g	.30	.11	.23	.11	.37	.35	.23	.22	.37	.05	.25	.23	.36	.27	.18	.13	.38	.25	.30
Q9a	.27	.24	.21	.11	.29	.31	.23	.23	.22	.15	.25	.23	.29	.25	.22	.08	.33	.25	.27
Q9c	.20	.25	.18	.12	.23	.27	.26	.22	.12	-.03	.23	.27	.26	.25	.18	.03	.26	.21	.21
Q9d	.16	.12	.25	.15	.23	.28	.16	.19	.27	.11	.19	.07	.27	.22	.15	.21	.23	.21	.23
Q9e	.22	.08	.25	.19	.16	.14	.19	.22	.28	.19	.27	.18	.19	.24	.19	.22	.23	.22	.22
Q9f	.08	.09	.06	.07	.04	.07	.10	.11	.04	.13	.20	.17	.04	.06	.10	.21	.02	.09	.03
Q20a	.10	.11	.16	.11	.08	.04	.17	.21	.16	.03	.18	.07	.10	.12	.10	.16	.15	.12	.17
Q21a	.26	.24	.24	.07	.36	.38	.22	.20	.39	.15	.25	.19	.40	.31	.24	.03	.40	.32	.36
Q21b	.25	.28	.24	.09	.36	.40	.20	.19	.35	.14	.24	.20	.39	.30	.23	.04	.39	.28	.34
Q21c	.33	.34	.32	.19	.43	.49	.32	.31	.38	.18	.35	.29	.49	.40	.33	.10	.51	.40	.46
Q21d	.42	.40	.42	.31	.58	.62	.44	.41	.52	.28	.46	.39	.63	.54	.47	.20	.64	.54	.61
Q22b	.21	.06	.03	.02	.15	.13	.06	.11	.11	.07	.06	.11	.08	.05	.09	.03	.16	.10	.09
Q22c	.18	.03	.06	.02	.14	.14	.02	.05	.20	.10	.03	.02	.11	.06	.08	.03	.18	.09	.11
Eng.	-.03	-.06	-.06	-.13	.02	.01	-.04	-.12	.13	-.07	-.11	-.08	.01	-.01	-.06	-.22	.00	-.03	-.05

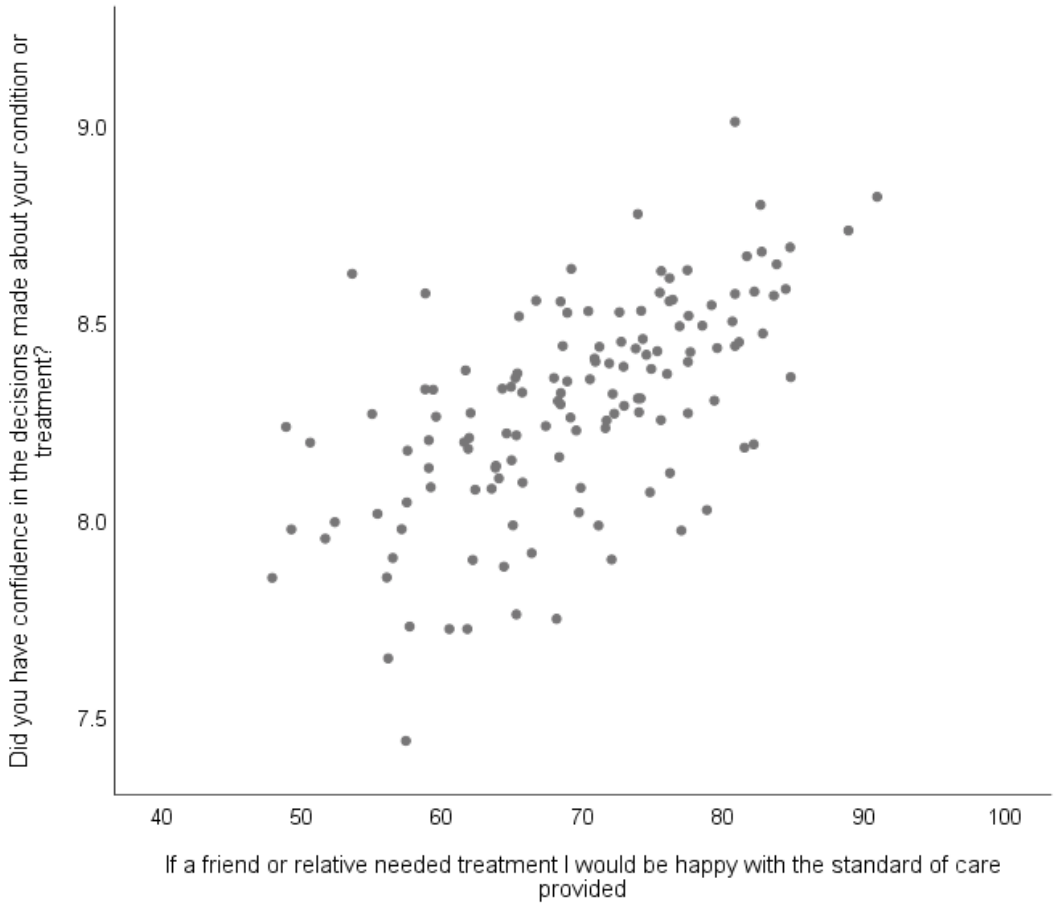

Figure 6: Relationship between patients' confidence in medical decisions and staff satisfaction with treatment available at the trust

There was also a consistent and positive association between most patient survey items and staff responses to the questions "*care of patients/service users is my organisation's top priority*", "*my organisation acts on concerns raised by patients/service users*", and was particularly strong for "*I would recommend my organisation as a place to work*". Staff feedback to questions relating to adequate staffing, organisational support and action on staff wellbeing was weakly positively associated with several patient survey items, with correlation coefficients in the range of 0.2 to 0.4. Patient experience was generally more positive in trusts where staff reported lower rates of work-related stress.

Discussion

Our analysis shows some striking associations between workforce-related variables on the one hand, and staff and patient experience on the other. While the data available limit the scope and sophistication of the analysis, and while we cannot demonstrate causality, the nature of the associations is in a plausible direction and warrants attention.

There is a large body of evidence linking staff wellbeing and outcomes to patient outcomes and experience. However, work pressures and staff shortages in the NHS are escalating, and likely to get worse given the financial constraints and probable impact of UK's withdrawal from the EU.

Financial and demand pressures on the NHS are mounting and declining standards of performance, including on key NHS performance indicators, are widely reported.[xiii] [xiv] Staff shortages, work pressures and turnover are escalating to unprecedented levels, and expenditure on agency or locum staff reached £2.9 billion in 2016/17.[xv] [xvi] For example, the Royal College of Nursing indicates that vacancies for nurses had risen to around 40,000 by December 2016.[xvii] In a survey of its members by the Royal College of Physicians, staff shortages, high bed occupancy, poor staff morale and risks to patient safety were widely reported.[xviii] The UK is below the Organisation for Economic Co-operation and Development (OECD) average for both doctors and nurses per head of population,[xix] and the problems in recruitment and retention are likely to worsen given poor workforce planning and the potential impact of Brexit.[xx] [xxi] The UK also has fewer acute beds relative to its population than almost any other comparable health system,[xxii] and with bed occupancy generally exceeding levels considered safe, there are signs of bed shortages.[xxiii]

In these circumstances, the risks to patient care are self-evident and it is particularly important to monitor staff wellbeing and how it is impacting on patients. Our analysis shows several findings that are significant in the current context.

We found that staff experience was associated with sickness absence rates, spend on agency staff and staffing levels, indicating that staff wellbeing is impacted negatively by a workforce that is overstretched and supplemented by temporary staff. Although some of this has been reported before, we are not aware that the association between staff experience and spend on agency staff has been reported previously.

Patient experience was also negatively associated with several workforce factors: higher spend on agency staff (a stronger association than observed for staff), fewer doctors and especially fewer nurses per bed, and bed occupancy. These findings are unsurprising. Use of agency staff provides less continuity of care and stability for hospitals and patients, and inadequate staffing and high bed occupancy will impact negatively on the quality of inpatient care. That these associations with workforce factors come through in patients' feedback is noteworthy, as it signals the risks to the quality of care for patients given the current crises in NHS staffing widely reported. The main focus of concern for spend on agency staff has been on financial savings; our analysis suggests that there are quality issues at stake as well.

Staff-reported experience was correlated with patient feedback in several areas, notably between staff perceptions of the quality of patient care and patient experience. This is important because it indicates that staff and patients' perceptions about the quality of care are consistent, and their feedback is both a sensitive and an accurate barometer of quality. For example, staff responses to the question "*If a friend or relative needed treatment I would be happy with the standard of care provided*" showed consistent and strong positive associations with almost all the 19 patient survey items analysed; this was the strongest and most consistent association observed between staff and patient reported experience.

Although both staff and patient experience were associated with spend on agency staff, and doctors/nurses per bed, the association was considerably stronger for patient experience, including also for bed occupancy. This highlights the importance of reducing dependency on agency staff, not just as a cost-cutting measure, but also from a quality of care perspective. Likewise, patients'

feedback shows the importance of reducing the pressure on beds and ensuring adequate staffing for improving quality of patient care.

Although we can't demonstrate causality in our findings, the associations observed between workforce factors, bed availability, staff and patient experience are plausible and resonate with the findings of other research. They suggest that the deepening crisis in NHS staffing and availability of beds could cause a deterioration in the quality of care that many say could follow, and in patients' reported perceptions of that care. The findings therefore have significance for policy makers in terms of the urgent need to address the workforce and NHS capacity issues highlighted by others. The findings should also be noted by hospital managers and staff, as they have implications for organisational workforce policies and protocols. Finally, we recommend these associations are monitored on an ongoing basis.

Acknowledgements

The authors wish to thank Ann Abraham for her helpful suggestions on a previous draft.

Appendix: Data sources for workforce and contextual variables

Spend on agency staff as a proportion of total pay

Rankings of trust agency staff spend as a proportion of total pay. April-September 2016. Data supplied in response to Freedom of Information request
https://www.whatdotheyknow.com/request/agency_staff_costs_3

Staff sickness absence levels and rates

NHS Sickness Absence Rates. Workforce and Facilities Team, NHS Digital, February 2017. Average SAR for Q2+3 https://digital.nhs.uk/article/4304/Workforce

Number of medical and nursing staff per hospital bed

Staff: FTE HCHS doctors and Nurses & health visitors.

NHS Hospital & Community Health Service (HCHS) monthly workforce statistics - Provisional Statistics - staff in Trusts and CCGs. Workforce and Facilities Team, NHS Digital, August 2016.
http://www.content.digital.nhs.uk/article/2021/Website-Search?productid=23451&q=NHS+Workforce+Statistics+August+2016%2c+Provisional+statistics&sort=Relevance&size=10&page=1&area=both#top

Beds: Total occupied beds, as below

Number of admissions

NHS inpatient elective admission events and outpatient referrals and attendances. NHS England: Unify2 data collection – QAR, October to December 2016.
https://www.england.nhs.uk/statistics/statistical-work-areas/hospital-activity/quarterly-hospital-activity/qar-data/

QAR is the collection of data to monitor the numbers of elective admission events and the numbers of referrals and attendances for England only outpatient appointments during a quarter.

Numbers of hospital beds available and proportions of beds occupied

Average daily number of available and occupied beds open overnight by sector. NHS England: Unify2 data collection - KH03, October to December 2016.
https://www.england.nhs.uk/statistics/statistical-work-areas/bed-availability-and-occupancy/bed-data-overnight/

KH03 is the collection of data to monitor available and occupied beds open overnight that are consultant led

References

i Ball J et al (2017) Evidence on the effect of nurse staffing levels on patient outcomes. Nursing Times; 113: 1, 48-49.

ii Dawson J. Staff experience and patient outcomes: what do we know? NHS Employers, 2014. http://www.nhsemployers.org/~/media/Employers/Publications/Research%20report%20Staff%20experience%20and%20patient%20outcomes.pdf

iii Boorman, S. (2009). NHS Health and Well-being review. Department of Health, Leeds.

iv West M, Dawson J et al (2011). NHS Staff management and health service quality. Aston Business School, 2011. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215455/dh_129656.pdf

v Lee, R. T., Seo, B., Hladkyj, S., Lovell, B. L., & Schwartzmann, L. (2013). Correlates of physician burnout across regions and specialties: a meta-analysis. Human Resources for Health, 11.

vi West, M., Dawson, J., et al (2011). NHS staff management and health service quality. Aston Business School. *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215455/dh_129656.pdf*

vii Boorman, S. (2009). NHS Health and Well-being review. Department of Health, Leeds.

viii Dawson J. Staff experience and patient outcomes: what do we know? NHS Employers, 2014. http://www.nhsemployers.org/~/media/Employers/Publications/Research%20report%20Staff%20experience%20and%20patient%20outcomes.pdf

ix Dawson J. Staff experience and patient outcomes: what do we know? NHS Employers, 2014. http://www.nhsemployers.org/~/media/Employers/Publications/Research%20report%20Staff%20experience%20and%20patient%20outcomes.pdf

x Dawson J. Staff experience and patient outcomes: what do we know? NHS Employers, 2014. http://www.nhsemployers.org/~/media/Employers/Publications/Research%20report%20Staff%20experience%20and%20patient%20outcomes.pdf

xi Raleigh VS, Hussey D, Seccombe I, et al. Do associations between staff and inpatient feedback have the potential for improving patient experience? An analysis of surveys in NHS acute trusts in England. BMJ Quality & Safety 2009;18:347-354. http://qualitysafety.bmj.com/content/18/5/347

xii Dawson J. Staff experience and patient outcomes: what do we know? NHS Employers, 2014. http://www.nhsemployers.org/~/media/Employers/Publications/Research%20report%20Staff%20experience%20and%20patient%20outcomes.pdf

xiii Murray R, Jabbal J, Thompson J et al. Quarterly Monitoring Report 23. The King's Fund, June 2017. http://qmr.kingsfund.org.uk/2017/23/

xiv NHS Improvement. Quarterly performance of the NHS provider sector: quarter 4 2016/17. NHS Improvement, 2017. https://improvement.nhs.uk/uploads/documents/M12_201617_provider_sector_performance_report_-_Fin_Accts_-_FINAL.pdf

xv Nuffield trust. The NHS workforce in numbers: facts on staffing and staff shortages in England. Nuffield Trust, October 2017. https://www.nuffieldtrust.org.uk/resource/the-nhs-workforce-in-numbers

xvi Buchan, Charlesworth A, Gerschlick B, Seccombe I. Rising pressure: the NHS workforce challenge. The Health Foundation, 2017.

xvii Royal College of Nursing. Safe staffing legislation to avoid patient-safety crisis. Royal College of Nursing, 2017.

xviii Royal College of Physicians. NHS reality check: delivering care under pressure. Royal College of Physicians, 2017. https://www.rcplondon.ac.uk/projects/outputs/nhs-reality-check-delivering-care-under-pressure

xix OECD. Health at a Glance 2017. OECD, 2017. http://www.oecd-ilibrary.org/docserver/download/8117301e.pdf?expires=1511769297&id=id&accname=guest&checksum=4BBC8BFBD224B05A318C4A03679511EA

xx Buchan, Charlesworth A, Gerschlick B, Seccombe I. Rising pressure: the NHS workforce challenge. The Health Foundation, 2017.

xxi http://www.health.org.uk/news/new-data-show-96-drop-nurses-eu-july-last-year

xxii OECD. Health at a Glance 2017. OECD, 2017. http://www.oecd-ilibrary.org/docserver/download/8117301e.pdf?expires=1511769297&id=id&accname=guest&checksum=4BBC8BFBD224B05A318C4A03679511EA

xxiii Ewbank L, Thompson J, McKenna H. NHS hospital bed numbers: past, present, future. The King's Fund, 2017. https://www.kingsfund.org.uk/publications/nhs-hospital-bed-numbers

Picker Institute Europe
Buxton Court
3 West Way
Oxford, OX2 0JB
England

Tel: 01865 208100
Fax: 01865 208101

info@pickereurope.ac.uk
www.picker.org

Registered Charity in England and Wales: 1081688
Registered Charity in Scotland: SC045048
Company Limited by Registered Guarantee No 3908160