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NHS staff wellbeing: Why investing in organisational and management practices makes business sense

A RAPID EVIDENCE REVIEW AND ECONOMIC ANALYSIS

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Abstract

This report makes the business case for investing in the wellbeing of NHS staff. It includes a narrative review of data on the current state of the mental health and wellbeing of NHS staff showing that nearly half of staff reported felling unwell as a result of work-related stress in the most recent survey, that sickness absence had increased, and that there are high vacancy and turnover rates in some Trusts. Research also shows that patient care can be affected by poor healthcare staff wellbeing.

The report estimates the financial cost to the NHS of poor wellbeing at £12.1 billion a year, and that around £1 billion could be saved by successfully tackling this issue. The report includes a rapid evidence review of organisational and management practices finding that actions focused on systemic/culture change, how working schedules are managed and improving aspects of the physical working environment have the most positive effects on staff wellbeing with some evidence on cost-effectiveness. However, the evidence base is generally weak.

The report concludes that while change is urgently needed there is no quick fix: systemic and sustained changes in organisational cultures within the NHS are required. Cultural change should be accompanied by a step-change in the priority which is placed on the protection of the workforce and the promotion of their health: managing staff health and wellbeing of staff should be put at the core of NHS operational plans, governance, and strategies, as well as the regulatory inspections by the Care Quality Commission. Given the unique structure and size of the NHS, there is a danger that because responsibility to make the necessary changes falls on different organisations operating at national, area and employer levels, not enough will be done to effect significant change. The issue of governance needs to be addressed up front.

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Executive Summary

The issue of concern

The pandemic has demanded an extraordinary response from NHS staff resulting in increased strain and workload intensity while highlighting their vital role as key workers. However, staff shortages and high vacancy rates pre-date the pandemic as have poor mental health and wellbeing. The NHS is now in a state of genuine crisis with long waiting lists and ambulance response times, as well as large numbers of staff resignations. Staff wellbeing seems to have been regarded as secondary to the operational goals of the NHS rather than of central importance. This report sets out the business case for transforming this state of affairs.

What did we find?

A narrative review of the state of mental health and wellbeing of NHS staff, including a review of the impact on patient and organisational outcomes showed that:

- Mental health is deteriorating with 47% of NHS staff reporting feeling unwell as a result of work-related stress in the previous twelve months.
- The overall sickness absence rate for NHS staff in England has increased to 5.7% in October 2021 and presenteeism (staff working while in suboptimal health and wellbeing) is likely to have a much more significant impact on overall productivity in the NHS.
- There are high staff vacancy and turnover rates.
- Several studies show that poor NHS staff health and wellbeing is associated with a range of outcomes including reduced quality of care, financial performance, and patient satisfaction.

Estimates of the costs to the NHS of poor mental health and wellbeing showed that:

- Poor mental health and wellbeing costs the NHS an estimated £12.1 billion a year (estimated cost of presenteeism £6.07 billion, staff absence £3.79 billion, and cost of the use of bank/agency staff £2.24 billion).
- By tackling poor mental health and wellbeing and reducing people voluntarily leaving the NHS could save up to £1 billion under some of the scenarios modelled.

A rapid systematic evidence review of organisational and management interventions showed that:

- Actions focused on systemic/culture change, how working schedules are managed and improving aspects of the physical working environment have positive effects on staff wellbeing.
- Actions focused on improving social support, automating processes and virtual working also have positive effects, at least for some people. Actions focused on improving the psychosocial work environment were less likely to result in improved wellbeing.
- Several of these actions have some evidence on cost-effectiveness and suggest a positive return on the initial investment made.

However,

- The evidence base is weak which speaks to investments in building a better understanding of what works in healthcare settings in the UK.
- Many of the actions that we examined were taken in isolation and as such did not look at wider context, broader systemic changes or interconnectedness with other components of a health and wellbeing programme.
- The evidence does not reflect on implementation and we know from other evidence that several factors are important when putting an offer in place: continuity or persistence of efforts to implement changes; learning from efforts to implement; adapting interventions and implementation plans to be suitable to local (and changing) contexts.

Key points for policymakers

Although change is urgently needed there is no quick fix: systemic and sustained changes in organisational cultures within the NHS are required.

Cultural change should be accompanied by a step-change in the priority which is placed on the protection of the workforce and the promotion of their health: managing staff health and wellbeing of staff should be put at the core of NHS operational plans, governance, and strategies, as well as the regulatory inspections by the Care Quality Commission.

Given the unique structure and size of the NHS, there is a danger that because responsibility to make the necessary changes falls on different organisations operating at national, area and employer levels, not enough will be done to effect significant change. The issue of governance needs to be addressed up front.

We must care for the carers and this requires investment at scale.

Change is affordable because of the longer term returns achieved, but **investment must be sustained and ring-fenced** and:

- Include managerial as well as financial resources;
- Include dedicated staff time to effect lasting change;
- Be in place for five years at a time.

Employing more staff with the money saved will also help reduce the burden of mental health problems.

The NHS has a responsibility to monitor staff wellbeing in order to receive better information on the challenges in their locality or organisation in order to address the specific health and wellbeing issues they face.

In highlighting the issue of staff wellbeing, the pandemic has created an opportunity for meaningful change.

The NHS is a healthcare service as well as an employer of a significant number of people. If it cannot first start with that most fundamental aspect of care - the care of its own staff - then how can it be expected to care for its patients or be a role model for other employers?

Introduction

This report sets out the business case for investing in measures to protect and promote the mental health and wellbeing of NHS staff. Staff wellbeing has traditionally been regarded as secondary to the operational goals of the NHS rather than of central importance. However, as we shall illustrate, better staff wellbeing is associated with improved quality and safety of patient care and therefore better patient outcomes, as well as with improved financial performance among healthcare providers.

The NHS is experiencing a workforce crisis that currently impacts the safety and quality of healthcare delivery on a daily basis (Kings Fund, 2022; CQC, 2022). Staff shortages and high vacancy rates pre-date the pandemic (Beech et al., 2019) but the pandemic has demanded an extraordinary response from healthcare workers, exacerbating the strain and workload intensity on an already stretched workforce. Consequently, a formidable backlog of urgent and elective care now exists with more than six million patients currently awaiting care (Baker, 2022).

According to NHS Staff Survey data, nearly 47% of NHS staff felt unwell as a result of work-related stress in 2021 and 44% in 2020. Other research shows NHS staff are at much higher risk of mental health problems compared with the general population. Although these statistics may in part reflect the strain placed on the NHS by the Covid-19 pandemic, this event cannot account for all of the data or their longer-term trends. The NHS Staff Survey indicates an increasing trend of staff feeling unwell because of work-related stress, from an already high level of 37% in 2016 with annual increases of around 1.5% to just over 40% in 2019. Extrapolating from this trend of year-on-year rises between 2016 and 2019 suggests that the pandemic is not the sole cause of the increased number of in staff feeling unwell due to work-related stress in 2021 and 2022; during the pandemic there has been clear evidence of exacerbation of the workforce's poor pre-existing state of mental health and wellbeing (Greenberg et al., 2021; Hall et al., 2022).

These figures point to deep-seated problems that require action – the data suggest that doing nothing or not enough of the right things is only making the situation worse. This has significant economic costs for the NHS, and hence the taxpayer. These economic costs are well understood by the NHS. [1]

Health and Safety legislation, Government commissioned reports and widely acknowledged good management practice [2] all make the organisation and management of work a central component of reducing the burden of mental ill-health and promoting better wellbeing. In this report, our aims are to examine those actions available to NHS and primary care employers that can improve psychological health and wellbeing outcomes through making changes to how work in healthcare is organised and managed, and to provide economic estimates of the costs or benefits for making such changes.

[1] See for instance the Interim Report of the Boorman Review (Boorman, 2009b). NHS. 2014. 'Five Year Forward View.' As of 14 November 2016: https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

[2] These include: Legislation such as Justice Colman's interpretation of the 1974 Health and Safety at Work Act in the 1991 case of Walker versus Northumberland County Council that there is no distinction in law between work as a cause of psychological injury and work as a cause of physical injury; recent Government commissioned reports include the Taylor Review of Modern Working Practices (Taylor et al., 2017) and the Stevenson Farmer review of mental health and employment (Stevenson & Farmer 2017); examples of good management practice include ISO 45003 on managing psychological health in the workplace (ISO, 2021)and the NICE guideline for work and mental health (NICE, 2022a).

Background

In this report, our core questions are:

What changes to organisational and management practices can improve staff wellbeing in the NHS and primary care?

Which of these changes are most likely to give a financial return on investment?

We will review the evidence that has explicitly examined changes made in NHS organisations (including primary care) in how work is organised, scheduled, performed and/or managed, including changes to the psychological, social and physical environments within which work takes place. Examples of such practices include changes to physical work spaces, flexible working, delegated decision making, introduction of new technologies, management development – where the focus of management development is changes in/to the wellbeing of those being managed.

We focus on wellbeing. Wellbeing is a broad concept, although it is primarily thought of as a psychological concept. Psychological wellbeing has the following major components: a) subjective assessments of life satisfaction; b) hedonic experience such as positive mood and emotions (eg, joy, enthusiasm) and the relative absence of negative mood and emotions (eg, lack of anxiety, feeling calm); and c) eudaimonic wellbeing (Diener, 1984; Waterman, 1993). Subjective wellbeing is usually taken to encompass summative assessments of satisfaction and mood and emotional experience (Diener, 1984). One of the most popular taxonomies of eudaimonic wellbeing includes feelings of autonomy, mastery, personal growth, positive relations with others, purpose in life and self-acceptance (Ryff & Keyes, 1995). Some models of wellbeing include markers of physical health (Van Horn et al, 2004), and public conceptions of wellbeing also include the experience of good physical and mental health (Daniels et al., 2018). Thus wellbeing, in its broadest sense, is able to capture a wide array of experiences that go beyond absence of psychiatric or physical symptoms and pick up positive as well as negative markers of healthcare workers' quality of life. As a broad concept, it is also appropriate because it enables us to examine a wide array of interventions because wellbeing is subject to multiple influences (see below).

Multiple large-scale scientific studies[3] have demonstrated that factors linked to how work is organised, scheduled, performed and managed and the workplace environment are associated with impaired mental health and other health problems such as suicidal ideation, heart disease and degenerative cognitive disorders (Kivimäki et al., 2012; Milner et al., 2018; Rugelies et al, 2020; Stansfeld & Candy, 2006; Then et al, 2014). Although there are other risk factors associated with differences between individuals in terms of genetics, personality, lifestyle and other factors not connected to the working environment, at a population level, improving working practices and environments should improve health (and so reduce healthcare spend and sickness benefits over the longer term and reduce sickness absence, and so contribute to national economic performance) (McKay et al, 2004). For an employer as large as the NHS, such improvements are potentially sizeable when applied across the entire workforce.

Concerns in the NHS and primary care

A number of recent reviews and analyses highlight significant problems in staff mental health in the NHS and primary care (Andah et al., 2021; Kinman & Teoh, 2018; Kinman et al, 2020; Stolk &Hafner, 2020). These include elevated risk of poor mental health, burnout and associated problems, which

[3] Such studies are often labelled 'epidemiological studies' and are concerned with naturally occurring levels of risk rather than intentional efforts to reduce those risks by making changes to organising and management practices.

are, at least in part, attributable to psychological, social and physical aspects of working environments. In turn these problems have a number of potentially significant problems linked to:

- Staff attitudes and behaviour eg, low morale, change fatigue, increased turnover from healthcare professions, absenteeism and presenteeism;
- Patient outcomes, including patient safety, satisfaction and quality of care.

Why invest in workplace wellbeing?

There are three broad arguments for investing in workplace wellbeing: the legal case, the moral case and the business case. The legal case is mandatory and should provide a baseline standard. Just as organisations recognise their obligation to provide physical health and safety standards, they must also recognise mental health and safety standards. Workers have the right to be protected against both physical and mental harm in their workplace. The moral case speaks to what kind of employer an organisation wants to be and whether they see their duty of care extending beyond the legal minimum requirements. This may be especially important for an employer such as the NHS, whose remit is to provide public health care, which might also imply a strong moral case to strive for high standards of workplace wellbeing. However, making a pure moral case is perhaps unrealistic or not pragmatic. Questions are inevitably asked about affordability and the opportunity costs of such spending. For the NHS with an already stretched budget, it may be argued that spending elsewhere (eg on patient-facing care) might be prioritised.

The business case relates to whether productivity improvements or future cost savings may occur as the result of improving wellbeing which outweigh the initial and on-going costs of a given intervention. As such, spending on improving wellbeing is seen as an investment in staff with financial returns. A strong business case supports the argument that the costs of doing nothing outweigh the costs of new initiatives which improve wellbeing. The returns on investment in staff wellbeing may be relatively immediate/direct such as reduced presenteeism, or longer term such as an improved reputation as an employer which improves recruitment and retention.

These three arguments may be in conflict at times, in which case meeting legal requirements takes priority and then a trade-off between the moral and business case may be assessed. However, there are also times when the arguments align. Not meeting legal requirements is usually not morally acceptable and has consequences which imply that it is not financially viable. Similarly, where there is a moral and business case in favour of improving wellbeing, which meets or exceeds legal requirements, then these opportunities should be highlighted and investment undertaken.

Current guidance

Current guidance on good practice, including that issued by NICE (NICE, 2022a), provides a recommendation of a multifaceted approach that encompasses:

- Rehabilitation for those returning from sickness absence;
- Other individually focused practices (eg, mindfulness);
- Steps to ensure the working environment (both psychological – eg cognitive demands, social – eg management and leadership – and physical aspects – eg configuration of space) does not expose workers to risks to their psychological or physical health and where possible is configured to promote wellbeing.

The NHS and Civil Service have agreed to follow the recommendations of the Stevenson-Farmer review to improve the mental health of workers which include actions on improving how jobs are

done, managed and organised (Stevenson & Farmer, 2017). Similar recommendations were made in the Boorman review (Boorman, 2009a). Moreover, under the UK's Health and Safety at Work Act (1974), an employer has a responsibility to take steps to reduce exposure to risk to levels as low as reasonably practicable, and there is no distinction between risks to physical harm or psychiatric harm (Walker v Northumberland County Council, 1994).

Therefore, based on guidance on good practice, recommendations for action accepted by the NHS, and current legal obligations, organisations should attempt, at a minimum, to ensure psychological, social and physical environments prevent physical and psychological harm.

Why this review?

Given statutory requirements around physical and mental health, NHS accepting the recommendations of the Stevenson-Farmer review and of NICE and other guidance, NHS and primary care organisations should attempt to make improvements to how work is organised and managed to protect staff health and promote wellbeing.

However, in the review of the evidence on the practical steps organisations can take, NICE concluded:

"The studies reported that the interventions showed either a benefit or no difference to the measured outcomes, and crucially none of the interventions showed any harm." (NICE, 2022b, p.97)

and

"*There was no published evidence on the cost effectiveness of universal organisational level approaches. However, based on their expertise and the evidence of effectiveness the committee agreed these types of interventions are a vital component of a broad strategy to address mental wellbeing in the workplace. With that in mind, the committee thought these interventions should be considered for inclusion in any further economic analyses.*" (NICE, 2022b, p.101)

Other reviews of such interventions have identified studies that indicate harms can materialise (Daniels et al., 2017; Daniels et al., 2021) and that the context within which the changes are made can influence the effectiveness of any changes (Daniels et al., 2021; Roodbari et al., (in press). A previous review in healthcare settings did find evidence that interventions focused on improving how work is organised and managed can be effective in healthcare settings (Brand et al., 2017). However, of the eleven studies included in that review, only three focused on improving work none of which took place in the UK. Another review focused on sickness absence as an outcome (Simmons et al., 2019). This review found only one study focused on improving work and that was conducted in Canada (Weir et al., 1997). The context of UK public healthcare may be especially problematic given:

- A highly institutionalised and politicised environment that may be resistant to change;
- A resource poor environment in terms of time and finances;
- Change fatigue from staff that may have left them cynical and resistant to further change;
- Staff may already have significant mental health problems, rendering actions to prevent problems occurring sub-optimal because significant injury has already occurred and that may not necessarily be reversible by removing the causes of that injury.

Positionality of the topic specialists

This report and the review contained within it was undertaken by topic specialists from the Norwich Business School, University of East Anglia, and RAND Europe, supported by review experts from UCL.

Professor Kevin Daniels is Professor of Organisational Behaviour in the Employment Systems and Institutions Group and the Workplace Wellbeing research team, Norwich Business School, University of East Anglia. He has led numerous projects on workplace wellbeing, health and safety.

Professor Sara Connolly is a Professor of Personnel Economics in the Employment Systems and Institutions Group and the Workplace Wellbeing research team, Norwich Business School, University of East Anglia. She is an economist and has led the Workplace Wellbeing research on the cost effectiveness of health and wellbeing workplace initiatives.

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Dr Christian van Stolk is an executive vice president at RAND Europe. He has worked extensively on health and wellbeing in the workplace. Christian has advised large private sector employers, the UK government, European institutions, OECD and World Bank over the years. He has contributed to several expert panels for the UK government including those on occupational health, mental health and employee health and wellbeing in the NHS.

Professor Kevin Fong is Chair of Public Engagement and Innovation for Science and Medicine, STEaPP, UCL, and a Consultant Anaesthetist, UCLH.

Structure of the report

In the remainder of this report, we will:

- Present more data on the scale of the problem in the NHS in terms of staff mental health and wellbeing (Part 1) and the effect on patient and organisational outcomes (Part 2);
- Present data on the costs of current levels of staff health and wellbeing to the NHS and therefore the taxpayer (Part 3);
- Present an overview of what is known to work and our logic model (Part 4);
- Review research in the NHS and primary care on actions to improve wellbeing (and performance) through making changes to how work is managed and organised, together with cost-effectiveness analyses of selected changes (Part 5);
- Present our conclusions and recommendations (Part 6).

Part 1: Mental health and wellbeing in the NHS

This section examines the mental health and wellbeing of the NHS workforce. It focuses on clinical staff where data allow with much of the available data being for England only. [4]

The summary conclusions (Parts 1 to 3) are that:

- Mental health is deteriorating in the Service with 46.8% of NHS staff reporting feeling unwell as a result of work-related stress in the previous twelve months.
- The overall sickness absence rate for NHS staff in England has increased to 5.7% in October 2021 and presenteeism (staff working while in suboptimal health and wellbeing) is likely to have a much more significant impact on overall productivity in the NHS.
- There are high vacancy rates and staff turnover rates.
- Several studies show that poor NHS staff health and wellbeing are associated with a range of outcomes including reduced quality of care, financial performance, and patient satisfaction.
- This comes at a cost to the NHS: this study shows that by tackling poor mental health and wellbeing and reducing the number of people voluntarily leaving, the Service could save up to £1 billion under some of the scenarios modelled.

The mental health and wellbeing of NHS Staff

Data from the latest NHS Staff Survey (data collected in October and November 2021 for England only) show how staff wellbeing has deteriorated over recent years (NHS, 2022). Around 50% of all NHS staff responded with 46.8% of these reporting feeling unwell as a result of work-related stress in the previous twelve months. This was an increase compared with previous years (2020 (44%), 2019 (40%), 2018 (40%). 2017 (38%) and 2016 (37%)) when rates were already high. The largest increases were in acute/acute and community trusts and acute specialist trusts. There was also an increase in the number who reported going to work in the previous three months despite feeling not well enough to perform their duties ('presenteeism') compared with 2020 (54% vs 46%). This figure was 57% in 2019. The rate of staff reporting that they felt burnt out because of their work was 34% (51% for ambulance staff and 41% for nurses and midwives).

The survey found that the overall theme[5] score for 'staff engagement' (6.8/10) was lower than in previous years. It had been 7/10 since 2016. This measure includes motivation, ability to contribute to improvements, and the extent to which they would recommend their organisation. Staff engagement has been linked to health and wellbeing. For example, in an analysis of data collected in

[4] By virtue of its size, NHS England accounts for the vast majority of UK employment in, and expenditure on, health. Across the NHS as a whole, 1.5 million full-time equivalent (FTE) staff are employed, the vast majority by NHS England (1.2 million) and NHS England accounts for 82% of the core health budget expenditure. Whilst the challenges faced by NHS England will dominate, we also provide some figures for NHS Scotland, Wales and Northern Ireland to confirm where the trends are similar or to illustrate where the devolved context may differ.

[5] The NHS Survey provides an overview of staff experience by using 'themes' as summary indicators. These are scored on a 0-10 point scale reported as mean scores with higher scores indicating better outcomes (NHS Technical Guide to the 2020 Staff Survey Data).

the 150-item Employee Health Assessment (collected as part of the 2016 NHS Healthy Workforce Survey) there was a significant association between both mental health issues and self-reported quality of sleep and staff engagement (van Stolk & Hafner, 2018).

A rapid review of studies reporting morale in the NHS undertaken in 2020 or 2021 (including pre-pandemic data) found levels of mental health to be low and declining (Kessler et al., 2021). Morale in the included studies was largely conceptualised in terms of wellbeing which in turn focused on mental health. There may be further adverse consequences, for example, studies of military personnel on deployment show an association between increased symptoms of mental health disorder and lower levels of morale and poor perceived leadership (Jones et al., 2012; Mulligan et al., 2010; Whybrow et al., 2015).

All these findings are supported by a wide-ranging review of research data undertaken before the pandemic combined with direct engagement with doctors, medical students, relevant government departments and professional bodies in the UK (West & Coia, 2019). Doctors reported unacceptable working and training conditions which impacted on their wellbeing. They also felt undervalued, unsupported in their roles, overwhelmed by workloads and that they had little control over their lives. A 2017 survey of doctors found 50% of respondents reported feeling unwell because of work-related stress (Penfold, 2019, reported in West & Coia, 2019, data no longer available).

The issue of poor wellbeing is not restricted to doctors. A study of ambulance staff in one large ambulance trust in England undertaken before the pandemic found more than 50% (n=382) reporting moderate (38%) or high (15%) levels of burnout [6], with causes cited including perceived lack of management support, the public's misuse of the ambulance service, involuntary overtime and a poor work-life balance (Beldon & Garside, 2022). Similarly, Westwood et al (2017) found that 69% of the UK psychological therapists they tested were categorised as suffering from burnout based on the Oldenburg Burnout Inventory which measures emotional exhaustion and disengagement.

What were the effects of the pandemic on the mental health and wellbeing of NHS staff?

Table 1 [7] shows the percentage of respondents scoring above threshold for possible mental health disorders at different timepoints throughout the pandemic. These data were collected from online surveys using a mix of both validated instruments and *ad hoc* measures so are indicative of likely disorder rather than providing definitive psychiatric diagnoses. The very high rates of post-traumatic stress disorder (PTSD) in ICU staff (40%; Greenberg et al, 2021) and nurses and midwives (29%-45%; Couper et al., 2022) were measured with validated instruments. These figures can be contextualised by comparing them with rates in the general UK population which, when assessed in 2014, showed that around 16% of people had a diagnosis of a common mental health disorder including 4% with PTSD (2014 Adult Psychiatric Morbidity Study (NHS Digital, 2016)). Comparison with rates in UK

[6] While burnout is not a psychiatric diagnosis it is recognised in the International Classification of Diseases 10 (ICD-10) as 'a problem related to life-management difficulty' and defined as a 'state of vital exhaustion' (ICD-10, 2010). ICD-11, not yet in use by the NHS, defines burnout as an 'occupational phenomenon' (WHO, 2019): 'Burnout is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterised by three dimensions: 1) feelings of energy depletion or exhaustion; 2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and 3) a sense of ineffectiveness and lack of accomplishment. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life.' (ICD-11, 2022).

[7] Data from earlier in the pandemic were identified via a truncated search strategy (see full methods document) while later data are from surveys undertaken by UK Royal Colleges and trades unions representing health and care staff.

military personnel creates an even more stark picture with 6% having possible PTSD in a survey undertaken between 2014 and 2016 (17% for veterans who had recently served in a combat role) (Stevelink et al, 2018). Therefore, the rates of reported PTSD observed among ICU staff during Covid exceeded those reported by recent combatants in the military. For comparison, a pre-Covid study of 335 ICU staff undertaken in 2015 found rates of probable PTSD of 8% among those working with adults and 17% for those working with children (Colville et al., 2015).

Staff role and number of respondents	Data collection date(s)	Burnout	PTSD	MDD	Anxiety	Any mental disorder	Other
Pandemic: First 6 months							
Nurses & midwives, n = 2040-3638 (Couper et al, 2022)	April-August 2020 (3 time points)		29.3%-44.6%				17.5% severe or extreme stress
ICU staff*, n=709 (Greenberg et al, 2021)	June-July 2020		39.50%	6.3% (severe depression)	11.3% (severe anxiety)	45.5%	7.2% problem drinking, 13.4% reported frequent thoughts of being better off dead or hurting themselves in previous two weeks
Obstetrics & Gynaecology doctors, n = 207 (Shah et al, 2020)	2020 (no further information)			15.94%	24.64%		
Orthopaedic staff, n = 62 (Thakra et al, 2020)	2020 (no further information)			19.4%	17.7%		
First winter (2020-2021)							
Hospital consultants, n = 3736 (RCP, 2021)	Nov 2020-Jan 2021	17% (3 or more features)					
ICU staff, n = 809-2792 (Hall et al, 2022, follow up of Greenberg et al, 2021)	Winter 2020-21 3 times points pre, during and post winter surge		31.3%-28.8%	33.9%-40%		45.4%-51.3% (64.6% during the surge)	
Nurses, n = 142 (Gillen et al, 2022)	Nov 20-Jan 2021	'Moderate' burnout**					
Midwives, n = 139 (Gillen et al, 2022)	Nov 20-Jan 2021	'Moderate' burnout**					

Pandemic 2nd year							
Nurses, n = 142 (Gillen et al, 2022)	May 2021 to July 2021	'Moderate' burnout**					
Midwives, n = 139 (Gillen et al, 2022)	May 2021 to July 2021	'Moderate' burnout**					
Second winter (2021-2022)							
Health staff, n = 10,602 (Unison, 2021)	Oct-21	69%***					40% time off for mental ill-health during pandemic
All staff, n = approx. 600,000 ****(NHS Staff Survey, 2022)	Oct/Nov 2021	34.30%					45% felt unwell because of work-related stress
Hospital doctors, n = 1,218 (RCP, 2022a,b)	Jan-22	17%					19% sought informal mental health support; 10% received formal mental health support

Table 1 Mental health-related outcomes by staff group and stage of the Covid-19 pandemic

*41% doctors; 48.5% nurses; 10.4% other healthcare professionals
** Mean score for all participants provided. Burnout scores: Scores of 50 to 74 are considered 'moderate', 75–99 are high, and a score of 100 is considered severe burnout
***reported experiencing burnout during the pandemic
**** The NHS employs around 1.2 million staff (full time equivalent) (King's Fund, 2022a)

Nurses tended to report poorer mental health than doctors (Greenberg et al, 2021; Hall et al., 2022). One survey found that generalised anxiety disorder (GAD) was more prevalent in female than in male respondents (Shah et al, 2020). This survey also asked about which work-related factors impacted mental health. Respondents indicated that the most important was 'keeping up to date with frequently changing guidelines, pathways and protocols related to Covid-19 practice' (Shah et al, 2020, p91). Also of concern is the number of staff leaving the NHS. Of consultant anaesthetists surveyed, 25% of those responding and 20% of SAS[8] anaesthetists said they planned to leave the NHS in the next five years, with reasons cited including not feeling valued or well supported and a need to improve mental wellbeing, reduce stress or burnout. The survey achieved a 20% response rate so represents a significant number of this staff group (RCA, 2021).

The link between workload and mental ill health was also apparent in other studies. Higher anxiety scores among orthopaedic staff were associated with concern about workload pressures as well as with feeling that their behaviour was being impacted by their mental state and a feeling of being less supported in the workplace (Thakrar et al, 2020). More than half of the healthcare staff responding to the survey by Unison (2021) reported they were covering more shifts due to staff shortages, with 57% regularly working beyond their contracted hours. More than half of respondents (57%) said they were thinking of quitting their jobs, with the most common reason for doing so being the impact that their work is having on their mental health. In January 2022, 55% of hospital doctors who responded indicated that they had been asked to fill a rota gap at short notice at least once during previous three weeks with 15% indicating this had happened on five or more occasions. Furthermore, 7% were unable to take planned time off over Christmas and New Year in order to

[8] Staff Grade, Associate Specialist or Speciality Doctor

cover for colleagues unable to work, and 5% indicated that they had wanted time off but there was no cover (RCP, 2022b). Although not specifically linked to mental ill health in this study, increase in workload over a period of time is likely to have an impact.

Many of the studies reported above used cross-sectional online survey instruments and self-selecting, albeit large, samples. In addition, not all studies used validated survey instruments. This is understandable given the difficulties in undertaking research at short notice and the importance of 'capturing the moment' during the pandemic. However, the Health and Social Care Workforce study is ongoing and is aiming to collect data not only indicating levels of mental ill health but also attempting to examine the effect of coping strategies (Gillen et al, 2022). As this study has not reported percentage-based data as in the studies in the table above, it is now discussed.

The **Health and Social Care Workforce study** (https://www.hscworkforcestudy.co.uk/) is collecting data from UK healthcare professionals (nurses, midwives, allied health professionals, social care workers and social workers). So far the study has collected data at three time points between May-July 2020, November 2020-January 2021 and May to July 2021 (with plans to collect twice more in 2022) focusing on wellbeing, work-related quality of life, burnout and coping strategies. Since the data are provided as mean scores for each professional group studied, they are hard to compare with data from other studies. Also, apart from for burnout scores, the study authors do not provide information to assess the clinical significance of the outcomes measured. However, what is clear is that respondents' wellbeing and work-related quality of life decreased in subsequent phases of the study with burnout increasing (burnout was measured only in Phases 2 and 3). The study also assessed coping strategies and found that better wellbeing was associated with positive coping strategies such as positive reframing, acceptance, use of emotional support and/or instrumental support, recreation, relaxation and exercise. Substance use, behavioural disengagement, and self-blame increased as the phases of the study progressed. Respondents who indicated they wanted to leave their employer or occupation during the pandemic had experienced higher personal, work-related and client-related burnout than those who did not intend to leave. There were also differences between respondents from different parts of the UK. Those from Northern Ireland reported higher wellbeing scores compared with those in England, while those from Wales reported better quality of working life than respondents from all other UK countries.

Monitoring staff mental health

Although the NHS Staff Survey is administered regularly, there is a need for a shorter, more frequent and operationally focused tool to monitor the wellbeing and mental health of the workforce on a regular basis. The resulting data could then be used by local clinical and nursing leadership teams at shop-floor/operational level to monitor their own teams, shape local strategies and policies, and gauge the effectiveness of local interventions.

There is precedent for this in other organisations, notably the British military which employs standardised mental health screening survey tools in its Operational Mental Health Needs Evaluation (OMHNE) survey (https://www.kcl.ac.uk/kcmhr/research/admmh/OMHNE). Importantly this monitoring is funded by the military but delivered by an independent, external agency - in this case the Kings Centre for Military Health Research (KCMHR) at Kings College London - to preserve transparency and objectivity in feedback and reporting.

Summary and comment

The data presented above indicate worryingly high levels of distress among NHS staff particularly when compared with rates in the general UK population. Clinical staff across a variety of specialties are experiencing high rates of possible mental disorders including major depressive disorder,

generalised anxiety disorder and PTSD. However, there is some indication that high rates of mental disorder found during a surge in the pandemic, fell later (Hall et al, 2022) suggesting that some people recovered, although it is not known whether the same participants completed the different phases of the survey or whether those who experienced symptoms of mental ill-health received treatment. However, the latest NHS staff survey suggests ongoing poor mental health. Data also show worrying levels of possible burnout in consultant physicians (RCP, 2021). The findings of one survey suggest that two-thirds of healthcare staff experienced burnout during the pandemic, with over half covering additional shifts or working extra hours (Unison, 2021). The health and social care workforce survey also suggests increased levels of burnout during the pandemic (Gillen et al., 2022).

Part 2: Building the case

As has been shown above the mental health and wellbeing of NHS staff which were already poor before the pandemic are now at worryingly low levels with 47% of healthcare staff reporting that they have felt unwell because of work-related stress (NHS, 2022) and 10% of hospital doctors receiving formal mental health support (RCP, 2022a). The effects of mental health disorder on NHS organisational outcomes such as sickness rates, staff turnover and staff engagement, as well as on the quality of patient care are now considered. Estimates of the costs to the NHS of these outcomes are provided in the following section.

Staff wellbeing and organisational outcomes

NHS staff absence rates

Based on NHS figures, t**he overall sickness absence rate** for NHS staff in England was 5.7% in October 2021 which compared with 4.6% in June 2021, 4.3% in May 2021 and 4% in June 2020 (NHS Digital, October 2021). [9] Ambulance Trusts had the highest rates reporting 5.9% in March 2021, while Clinical Commissioning Groups had the lowest at 2.1%. The sickness rate in the UK population as a whole was 1.9% in 2019 (ONS, 2020). Reliable sickness absence data rely on accurate recording systems and many organisations (including the NHS) find that short-term absences may be under-reported, particularly for some staff groups. However, people working in health and social care organisations had the highest sickness absence rate of any key worker group in both 2019 and 2020 with rates of 2.9% and 3.5% respectively (ONS, 2020).

Mental health issues, including anxiety, stress and depression, are the most common reason for NHS staff absence representing 29% of all sickness absence in England[10] (NHS Digital, October 2021) with the rate among doctors in secondary care settings at 23% in August 2021 (BMA, 2021 https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/workforce/nhs-medical-staffing-data-analysis). However, a relatively large percentage of absences were Covid-related, for example, accounting for 11% of all absences in March 2021 (NHS Digital, October 2021). The highest rates were reported by nurses, health visitors, midwives and ambulance staff. Sickness absence rates are higher in the public sector (2.7%) than in the private sector (1.6%) and the rate has been declining in both, at least in part due to furlough and working from home during the pandemic (ONS, 2020). However, there is a consistent difference in the rates of staff absence due to mental health conditions (15% of absences in the public sector compared with 9.9% of absences in the private sector). The NHS Staff and Learners' Mental Wellbeing Commission reports a cost of poor mental health in the NHS of between £1,794-£2,174 per employee per year (HEE, 2029). Data from 67 Trusts obtained through a freedom of information request reported by The Guardian newspaper revealed a staggering 22,718 years equivalent of mental health sick leave since 2017 (Savage, 2022).

Staff turnover in the NHS

There is a high vacancy rate in the NHS, [11] a problem which predates the pandemic, with 39,800 vacancies for nurses in England in September 2021 and significant problem with recruiting GPs (BMA, NHS medical staffing data analysis (bma.org.uk)). [12] Around 11% of staff left 'active service' in

[9] Reported sickness rates in NHS Scotland were 4.7% (https://turasdata.nes.nhs.scot/data-and-reports/official-workforce-statistics/all-official-statistics-publications/01-march-2022-workforce/dashboards/nhsscotland-workforce/?pageid=6429; accessed 12th April 2022) and 6.7% in NHS Wales (NHS Wales Workforce Trends March 2021)

[10] Anxiety, stress, depression or other psychiatric illness were also the main cause of staff absence in NHS Scotland and Wales.

[11] Vacancy rates are lower in NHS Scotland (5.4%) and Northern Ireland (6.7%, https://www.health-ni.gov.uk/topics/dhssps-statistics-and-research/workforce-statistics, accessed 12th April 2022)

[12] GP FTE numbers have declined from 29,363 in 2015 to 27,920 in 2022 (https://questions-statements.parliament.uk/written-questions/detail/2022-03-22/144878, accessed 12th April 2022)

the year to September 2021 although there is significant variation on in rates between regions and Trusts (Palmer & Rolewicz, 2022). Commonly cited reasons for leaving roles include relocation and retirement, as well as poor work-life balance and health issues (Palmer & Rolewicz, 2022). Increasing numbers of doctors are taking early retirement exacerbating existing staff shortages. A recent survey of doctors indicated that 18% were thinking of leaving the profession in 2021 a rise from 12% in 2019, with reasons including wellbeing and a desire for better work-life balance (GMC, 2021). There were also a significant number of older doctors who postponed retirement in order to assist during the pandemic who are now looking to retire (Palmer & Rolewicz, 2022). The Nursing and Midwifery Council regularly surveys nurses on their plans to leave, finding the three most common reasons over time include workplace pressure, personal circumstances and retirement (NMC, 2020). In 2021 they included two further reasons – workplace culture and Covid - 29% indicated that they had left due to workplace culture and 14% indicating that their decision had been influenced by the pandemic. However, staff turnover figures can be misleading as data include staff moving to alternative roles within the Service, not just leaving the NHS altogether (Palmer & Rolewicz, 2022).

A mixed-methods study undertaken before the pandemic of 143 'early leaver' GPs who had left the English Medical Performers List between 2009 and 2014 and were under 50 years old showed reasons for leaving included increased workload and feeling isolated (Doran et al, 2016). One respondent who undertook appraisals found colleagues exhausted, burnt out, disassociating from the job and lacking in 'fight' to get what patients needed. A third of those completing the survey reported ill health including stress, anxiety and the early symptoms of burnout. The findings of this study are supported by a realist review of interventions to support doctors' mental health which concluded that mental ill-health resulted from isolation, feeling unable to do their job (partly because of loss of autonomy) and fear of repercussions from help-seeking (Carrieri et al, 2020).

The impact of HR practices

A workforce analytics project conducted in partnership between the NHS Shared Business Service and Medway NHS Foundation Trust showed that while staff-specific factors may play a part in reasons for leaving (such as age and sickness record), other influential factors (such as salary levels and tenure) could be controlled through active HR management (NHS SBS, n.d.). There is an established evidence base showing that extensive use of good people management can have positive impacts for both employee wellbeing and organisational outcomes (Ogbonnaya et al, 2017). Ogbonnaya and Daniels (2017) explored the impact of HR practices on wellbeing and organisational outcomes in the NHS. They found that NHS Trusts which made the most extensive use of good people-management practices had higher levels of job satisfaction and engagement, more satisfied patients and lower levels of sickness absence. West and Dawson (2012) analysed post-2009 NHS Staff Survey data uncovering the importance of appraisal methods to staff engagement. Structured approaches predicted higher levels of engagement which in turn led to lower levels of work-related stress and presenteeism. Another management-related factor impacting on wellbeing includes perceived support from managers and colleagues (Sizmur and Raleigh, 2018). A time series study of trends in sickness rates in ambulance services in England conducted pre-Covid (2009-18) reported significant variation across trusts which could not be explained from the available data but which suggest that HR practices are likely to be important in reducing absence (Asghar et al, 2021).

The importance of staff engagement

As shown above staff engagement is predictive of other outcomes. For example, a secondary analysis of the 2016 NHS Healthy Workforce survey and other NHS data examined the association between staff engagement and absenteeism and presenteeism, turnover, patient satisfaction and financial performance (Hafner et al, 2018). Higher levels of engagement were associated with lower

levels of absenteeism and presenteeism, as well as with higher patient satisfaction scores. Higher engagement was also associated with organisations reporting better financial situations (using NHS account data for Foundation trusts and trusts using the operational surplus/deficit as a comparable measure). Analysis of the 2006 to 2009 NHS staff surveys also showed how patient outcomes are linked to aspects of organisational functioning which in turn is linked to staff health and wellbeing with patient satisfaction highest in trusts that have clear goals both at team and individual level (West and Dawson, 2011).

The effect of staff wellbeing on patient outcomes [13]

Since poor wellbeing is likely to impact on performance, examining research which has found associations between poor wellbeing and patient outcomes is relevant, although it should be noted that identifying associations between outcomes is not the same as establishing causal links.

Quality of care and patient satisfaction

The NHS Staff Survey 2021 showed that 67.8% of staff were satisfied with the standard of care provided by their organisation compared with 74.2% in 2020 (NHS, 2022). Given the size of the NHS workforce the remaining 32.2% of staff represents a significant number who are dissatisfied with the care they feel they give. Examining available data in more detail helps to show the factors which may be associated with perceptions of poorer care.

Unsurprisingly better staff-to-patient ratio led to a better impression of care quality as shown by Sizmur and Raleigh (2018) in an analysis of data from 134 NHS general acute trusts in England. Staff perception of the quality of care was also positively correlated with patient experience in this study which analysed data from various sources. These included the NHS staff experience and NHS inpatient experience surveys for 2016 together with statistical data for numbers of doctors and nurses per occupied bed, spend on agency staff, staff sickness absence rates and proportion of beds occupied all for Q2-Q3 or Q3 only, plus number of admissions and hospital beds, all for 2016. Analysis of patient feedback data showed that the experience of care was lower in trusts with a higher spend on agency staff. Experience of care covered communication with doctors, perceptions of how well staff worked together, confidence and trust in doctors, confidence in care decisions, and having someone to talk to about worries. These findings support previous research showing that trusts with higher staff wellbeing report higher patient satisfaction scores (measured by in-patient surveys) as well as lower levels of MRSA (Boorman, 2009b).

Higher staff engagement has also been linked to increased patient satisfaction (van Stolk & Hafner, 2018) and poor staff experience associated with lower patient satisfaction (Dawson, 2018). Staff experience in this latter study included high work pressure, perception of unequal treatment, discrimination, and physical violence between staff. Analysis of data from 2007 reported by Boorman (2009b) showed that when measured by injury rates, stress levels, job satisfaction and turnover intentions, staff wellbeing levels also correlated with patient satisfaction.

Medical errors

A number of studies have also shown an association between aspects of healthcare professionals' mental health and wellbeing and medical errors. In a high-quality systematic review, Hall et al (2016) examined international studies reporting healthcare staff burnout and/or wellbeing together with a

[13] This section draws on studies identified in an unpublished scoping review undertaken in May 2021 which focused on interventions to improve staff wellbeing but also examined research quantifying the effect on staff, patient and organisational outcomes (Zawartka, 2021). Zawartka (2021) used keyword searches of PubMed, Google Scholar and the BMJ. The reference lists of relevant articles were scanned together with the publication lists of relevant authors. In addition, the websites of NHS-affiliated organisations including NHS Employers and NHS Confederation were searched for relevant publications.

measure of patient safety (mostly self-perceived errors but also self-reported 'accident propensity' and perceived likelihood of making errors). They found 46 studies from 16 countries (four published pre-2002), most from the US and most using cross-sectional survey designs. Twenty-four studies were of nurses, 28 of doctors including surgeons, anaesthetists and doctors in training followed by studies of pharmacists (n=2), mixed hospital staff (n=2) and paramedics (n=1).

Over half of studies reporting wellbeing-related measures (eg depression, anxiety, job stress, mental health, distress) found that poor wellbeing was associated with poorer patient safety, with a further six studies finding a similar relationship on some measures. Two studies found that anxiety but not depression was associated with errors while studies measuring burnout found that increased levels were associated with a higher number of errors.

Studies that measured both wellbeing and burnout found that both states were associated with errors although Hall et al point out that most of these studies used self-reported errors as the outcome measure. Studies using an objective measure of errors found just an association (ie not statistically significant). Hall et al suggest that the reason for this discrepancy is that objective measures may not be sufficiently sensitive. However, the studies using objective measures (eg hospital records) suggest that poor wellbeing (eg stress or depression) may be linked with errors. One study which looked at both subjective and objectively measured errors found burnout was associated with self-reported errors (specifically as a result of sleep deprivation) while depression was associated with objectively measured errors (Fahrenkopf et al, 2008). The findings of this study which surveyed paediatric doctors (n=123) also suggest that burnout may be a precursor to depression, since most participants (96%) who were depressed were also burnt out, but of those that were burnt out, only 25% were depressed.

West and Coia (2019) in their review of data from doctors mainly in England describe how poor wellbeing and associated strain are linked to increased medical errors among doctors and could also impair decision making (having a negative impact on patient outcomes). They also provided evidence suggesting that doctors with high levels of burnout had between 45 percent and 63 percent higher odds of making a medical error compared with those who had low levels.

A survey of 1,790 nurses in the US undertaken in 2016-2017 found an association between worse health (mainly based on mental health and wellbeing measures) and self-reported medical errors (Melnyk et al, 2018). Similarly, a cross-sectional study of 260 paramedics in Japan found an association between impaired performance at work (presenteeism) and 'near misses' (such as dropping patients, treatment errors or careless driving) (Ishimaru et al, 2019).

Infection and mortality rates

West and Dawson (2011) analysed data from the NHS Staff Survey 2006-2009 together with other published outcome data to demonstrate that infection rates decreased in trusts where staff reported being able to contribute towards service improvements and where there was support for incident reporting. The analysis also showed that patient mortality rates were lowest in trusts with good management practices where staff worked in well-structured teams with clear goals, had performance reviews, and where team members worked closely with each other. Staff who work in this way were also more likely to have better health and wellbeing and report lower rates of work-related stress and presenteeism. A similar analysis using data from the NHS staff surveys for 2009 and 2010 (West & Dawson, 2012) found an association between patient mortality rates and staff engagement, calculating that one standard deviation increase in engagement would decrease mortality rates by 2%. On infection rates, this analysis calculated that if 10% more staff felt able to

contribute to service improvements, this would result in an average of 0.57 fewer cases of methicillin-resistant Staphylococcus aureus (MRSA) per 10,000 bed days.

Boorman (2009b) reports an association between staff health and well-being and MRSA infection rates for acute Trusts in April 2008. He cautions that the causal pathway is unclear, since poor staff wellbeing may lead to practices that allow higher infection rates, but high rates of MRSA infection may contribute to poorer staff health through a variety of mechanisms.

Summary and comment

Sickness absence in the NHS is more than double that in the UK generally and mental ill-health is a leading cause. In addition, there are relatively large numbers of staff leaving their jobs. While it may be easy to identify statistical associations between poor staff wellbeing and outcomes, causal mechanisms are less clear. HR practices, such as appraisal methods and management support appear to have some benefit. Meanwhile, there is a knock-on effect on patient outcomes with patient satisfaction being higher when staff experience is better. Poor staff wellbeing has been linked to increased number of medical errors, and lower infection and mortality rates are associated with better management practices.

Part 3: Estimating the costs of poor health and wellbeing

The evidence suggests a strong link between poor wellbeing and low engagement with adverse consequences for presenteeism, staff retention and staff absences. An overview of NHS staff sickness and turnover rates across the UK in 2020/21 is provided in Table 2. Sickness rates and expenditure on bank staff are high across the NHS in the UK, with turnover and vacancy rates particularly high in England. Not all figures are available for Northern Ireland or Wales.

	England	Scotland	Wales	Northern Ireland
Staff FTE	1,212,478	155,834	88,638	63,874
Sickness rates	5.4%	4.7%	6.7%	n/a
Turnover rates	11.0%	5.2%	n/a	4.8%
Vacancies	10.3%	5.4%	n/a	6.7%
Spend on bank/agency staff	£6.20b	£0.32b	£0.20b	£0.28b

Table 2 – Headline figures across the UK 2020/21

n/a = not available

Staff sickness absence rates are often used as a headline figure for staff wellbeing (Bajorek & Holmes, 2020). The Boorman Review (Boorman, 2009a) suggested that tackling the costs of poor health and wellbeing among NHS staff will help achieve cost savings across Trusts. In the review, it was calculated that the cost of absence was £1.7 billion a year in England (10.3 million working days lost, the equivalent of 45,000 whole time equivalents or 45 percent of the current workforce). The report also calculated that if sickness absence was reduced by a third, then the benefits would include a gain of 3.4 million working days and an estimated direct cost saving of £555 million annually (in 2009). There are also indirect costs to sickness absence, for example the use of temporary staff cover (which the review estimated to be £1.45 billion a year) to cover staff gaps.

Cost of staff absence to the NHS

Using figures for NHS England April 2020-March 2021 (NHS Digital, July 2021 (for NHS England)), 19,570,137 full-time equivalent (FTE) days were lost due to staff absence. Given an FTE staff size of 1.3 million, this equates to 15 days per year per member of staff, a figure that is higher than that reported in the Boorman review (Boorman, 2009b) (10.7 days per year per member of staff), although the context of the pandemic accounts for some of this increase – 2.5 days per member of staff is due to illness or isolation associated with Covid. The rates of staff absence in the NHS are rising despite the emphasis placed on tackling poor health and wellbeing in the Boorman Review (2009a), and poor mental health accounts for a growing proportion of absences (29% of absences in the NHS).

The cost of sickness absence can be assessed in a number of different ways. The direct financial cost incurred of paying the salaries of staff who are not able to work, plus other indirect costs which include the additional workload for staff when colleagues are absent (and any associated costs of increased stress, risk of burnout etc), the cost of employing agency staff as cover, the administrative costs of managing staff rotas and cover when staff are absent, the time spent developing managed

return to work schedules for staff that have been on long-term sickness absence, the costs of managing waiting lists and the costs to patients, their families and employers if treatment is delayed.

Focusing only on the first of these costs and using a conservative approach to evaluation using average salaries, this equates to a cost of £3 billion in that year (April 2020-March 2021), see Table 3. Stress and poor mental health are the main factors leading to sickness absence, accounting for an average of 4.4 days of absence per member of staff in the same year, at a cost of £0.88b per year. Salary costs are not the full staff costs incurred by the NHS which also include employer's national insurance and pension contributions, typically adding a further 25% onto salary costs - **£3.79 billion per year** (this is our preferred estimate). The full economic costs which would include overheads and training would be much higher but are not considered here because these are sunk costs. An alternative estimate takes account of the full costs of employing staff (based on the NHS staff costs £56.1 billion and 1.2 million FTE staff numbers in 2019/20, equating to £46,750 per FTE member of staff on average or £210.59 per day worked across 222 days per year). In 2020/21, 19.5 million days of absence were reported (equivalent to 93,191 FTE staff) at a cost of £4.12 billion per year, using this alternative estimate.

	Number of staff[1]	All days of absence	Days of absence due to mental health	FTE annual salary	FTE daily rate	Cost of all absence based on salary only	Cost of absence due to mental health based on salary only
All staff	1,348,499	19,570,137	5,701,576	£34,427	£155.08	£3,034,912,180	£884,193,232
Professionally qualified clinical staff							
Doctors	132,113	705,274	151,329	£69,878	£314.76	£221,994,978	£47,633,071
Nurses & health visitors	347,385	5,705,680	1,567,605	£34,938	£157.38	£897,954,324	£246,708,176
Midwives	27,188	394,047	131,899	£36,722	£165.41	£65,180,491	£21,817,828
Ambulance staff	18,895	348,765	84,768	£34,286	£154.44	£53,863,115	£13,091,564
Scientific, therapeutic & technical staff	175,007	1,701,371	507,045	£38,994	£175.65	£298,840,878	£89,060,915

Table 3 – Salary costs of absenteeism to NHS England (see Appendix A for more details)

[1] Number of staff NHS England 31/03/2021

Cost of staff presenteeism to the NHS

Staff presenteeism and leaveism, where staff either come to work while ill or take annual leave instead of reporting ill for work, account for the most significant share of the costs of poor wellbeing in the workplace. A systematic review conducted by Kigozi et al (2017) explored the evidence on the estimated costs of presenteeism [14] in the working population using evidence from 28 studies in developed economies. They concluded that these are often more significant than the costs of absenteeism but they are under-researched. Lui et al (2018) partly justify their international

[14] In order to estimate the cost of presenteeism it is assumed that, while someone who is at work when unwell is likely to be able to work to some extent, this may not be at their usual rate.

systematic review of 24 studies on the factors associated with presenteeism among hospital doctors and nurses on the grounds that presenteeism is more common in healthcare than in other professions. In the UK, Boorman (2009b) reports that 20% of NHS employees worked for one or two days while ill while more than 5% worked for more than six days when not well. High levels of presenteeism (54% of staff reported coming in to work in the last three months despite not feeling well enough to perform their duties) were also reported in the **NHS Staff Survey 2021** (NHS, 2022). These figures are higher than those reported by the Chartered Institute of Personnel and Development (CIPD) (46%) in their survey of around 5,000 people in a range of sectors and occupations using the same question in the same year (CIPD, 2022). In addition to diminished productivity, a health professional working while ill might increase their risk of burnout or require longer recovery times but also increase the likelihood of mistakes which impact negatively on patient care (iD Medical, 2021).

There is a general consensus in the literature that the costs of presenteeism exceed those associated with absenteeism, but in part this is driven by evidence from countries such as the US where the statutory provision for sick leave is weaker and workers may be more inclined to report for work when sick. However, despite the existence of statutory sick leave and pay in the UK, the evidence suggests that there is still a stigma and reluctance to report mental health problems and poor mental health is the main driver of presenteeism. The stigma associated with reporting poor mental health also applies to medical professions. Spiers et al. (2017) find that GPs expressed concerns around reporting their own mental ill health, and so the figures for NHS England on days of absence due to poor mental health in Table 3 may an under-estimate.

In developing a business case for mental health support in the workplace in 2007, the Centre for Mental Health used a multiplier of 1.5 days for estimating the costs of presenteeism in the UK (Parsonage, 2007). That is for each day lost through staff sickness, a further 1.5 days are lost through staff presenteeism. When reviewing the business case ten years on in 2017, the Centre for Mental Health cited evidence that rates of presenteeism were increasing and that their original multiplier underestimated the costs which they updated to be equivalent to twice the costs of absenteeism in the UK (Parsonage & Saini, 2017). They justified the adjustment using evidence on the cost of mental health absence referring to evidence from three studies: one from the US which estimates that presenteeism accounts for between 70%-81% of health related costs (Schultz et al., 2009), an Australian study which found that the costs of presenteeism associated with depression in the workplace were more than eight times as high as those of sickness absence (McTernan et al., 2013), and evidence in the UK using Britain's Healthiest Workplace data which found that the costs of presenteeism were seven times as large as those attributable to absenteeism (RAND Europe, 2015). Using data on absenteeism in the NHS for the year 2020/21, we use the approach advocated by the Centre for Mental Health (Parsonage & Saini, 2017) and estimate the costs of presenteeism to be twice the salary costs of absenteeism at **£6.07 billion per year** but caution that this may be an under-estimate (see Table 4).

	Lower estimate[1]	Middle estimate[2]	Upper estimate[3]	Cost of presenteeism due to mental health[4]
All staff	£4,552,368,270	£6,069,824,360	£8,340,071,572	£6,189,352,623.83
Doctors	£332,992,467	£443,989,956	£507,793,407	£333,431,500
Nurses & health visitors	£1,346,931,486	£1,795,908,648	£2,378,203,379	£1,726,957,231
Midwives	£97,770,736	£130,360,981	£196,087,460	£152,724,797
Ambulance staff	£80,794,672	£107,726,229	£132,412,498	£91,640,947
Scientific, therapeutic & technical staff	£448,261,317	£597,681,756	£833,206,367	£623,426,404

Table 4 – The costs of presenteeism (see Appendix B for more details)

Notes: the costs of absenteeism are taken from Table 3, we base these on the daily salary rate and the days of absence and exclude the additional costs of pensions and national insurance contributions on the grounds that staff are working.

[1] 1.5 * days of absence (Parsonage, 2007)
[2] 2 * days of absence (Parsonage & Saini, 2017)
[3] Costs evaluated as 1 day lost due to presenteeism per day of non-mental health related absence + 7 days lost due to presenteeism per day lost due to mental health (McTernan et al., 2013, RAND Europe, 2015)
[4] Cost of presenteeism due to mental health alone 7 days lost due to presenteeism per day lost due to mental health McTernan et al., 2013, RAND Europe, 2015

Cost of staff turnover to the NHS

Staff retention, both in relation to staff turnover where staff leave for a job elsewhere or where staff take early retirement, is another important indicator of staff wellbeing. The Boorman Review (2009b) illustrates a range of 10%-17% staff turnover for Trusts with good to low wellbeing. Leaver rates in the NHS declined during the pandemic but are now returning to pre-pandemic levels (Palmer & Rolewicz, 2022). Figures for NHS England 2020/21 show that turnover rates within the NHS are relatively low – under 1% of the NHS England workforce transferred to another part of the NHS – in the same period 1.5% retired and just under 9% resigned (NHS Digital, October 2021). Voluntary quits – resignations from the NHS - have risen over the past ten years accounting for 72,345 staff (41% of the reasons for leaving) in 2011/12 and 107,215 staff (58% of the reasons for leaving) in 2019/20. There is a noticeably higher drop-out rate among staff within the first years after completing their training.

Some staff turnover can be beneficial to organisations as it refreshes personnel, updates skill sets and can encourage reflection on approaches. However, high levels of staff turnover exacerbate the ongoing problems of staff shortages due to unfilled vacancies which currently account for 9% of the nursing and 5% of the medical workforce (NHS Vacancy Statistics, 2021). Unfilled staff vacancies and staff turnover also contribute to increased pressure on the remaining NHS workforce risking burnout and, consequently, sickness absence, creating further costs.

One approach to estimating the costs of staff turnover is to use the framework developed by Oxford Economics (2014) for estimating the costs of staff turnover (which include recruitment costs and lost output) to be in excess of the average annual salary per employee. Recruitment costs will be sensitive to whether recruitment is from the domestic or international market – for example, the Royal College of Nursing (RCN) report on a case study at the Hillingdon Health Trust which costs domestic recruitment at £403.70 per nurse and international recruitment from Italy (pre-Brexit) at £6,371.41 per nurse (RCN, 2015). A more recent study estimates the costs of recruitment of nurses

from the Philippines at £10,000-12,000 per nurse (Palmer et al, 2021). While significant, the recruitment costs are relatively small when compared with the lost output associated with the average amount of time it takes an organisation to recruit a new member of staff and for the new recruit to reach optimal productivity. The Oxford Economics (2014) research indicates that costs are higher for more skilled workers and are higher when recruiting new staff who are either recent graduates with more limited experience or where staff are recruited from different sectors.

Given the highly skilled nature of the NHS workforce, we illustrate this by evaluating at the average NHS salary between October 2020 and September 2021 of £34,427. Across NHS England in 2019/20, 107,215 members of staff voluntarily resigned generating significant costs that are comparable to the loss associated with staff absence of **£3.69 billion per year** (£3.69 billion = £34,427 x 107,215). [15]

Cost of agency cover to the NHS

These estimated costs focus upon the 'lost' productivity of staff absence – staff costs being paid but without the associated input – but in practice Trusts incur further costs as they cover staff absence and any unfilled vacancies by employing agency or NHS bank staff. Like van Stolk and Hafner (2018), Dawson and West (2017) find a clear association between employee engagement and staff absenteeism, and also a significant relationship between employee engagement and spending upon agency staff – they suggest the difference between Trusts with moderate and higher levels of staff engagement could be £1.7m a year in spending upon agency staff based on an average staff mix. The Boorman Review (2009b) shows that Trust spend on agency staff is linked with wellbeing performance, indicating a range of 1%-6% of wage bill spent on agency costs for different Trust types where staff express low to high intentions of leaving and estimate potential savings of £0.6109m to £0.511m on expenditure on agency staff for a Trust improving from poor to average to high wellbeing performance. In response to a parliamentary question on the cost of hospital use of agency and bank staff, the Secretary of State for Health and Social Care reported that these were £6.2 billion in 2019-20 [16] (UK Parliament, 2020). The NHS across the UK spends £7 billion per year on employing agency staff (Table 2), costs which include cover for all staff absence and unfilled vacancies.

Therefore, we explore the costs of poor wellbeing by estimating the impact upon the cost of employing agency staff to cover for NHS staff. We do not have breakdowns on the use of agency staff for specific purposes such as covering staff absence due to sickness. For illustrative purposes we focus on the possible use of agency staff to cover the situations which are most directly associated with poor wellbeing among NHS staff – cover for absence due to poor mental health and cover for voluntary quits.

While Trusts are unlikely to use agency staff to cover very short-term sickness absence – depending upon specialty, teams are likely to be expected to cover the workload which, given the level of absenteeism, is likely to contribute to stress and burnout. However, absences due to stress or mental ill-health can be longer term (the Boorman report (2009b) indicates that most sickness absence in the NHS is for longer than one week) and for simplicity, we calculate the cost to the NHS of using agency staff (at an average daily rate of £209) to cover all days lost due to mental health (5,701,576) as **£1.19 billion per year** (NHS, n.d.). In practice, these costs will be sensitive to the staff type and salary band, shift being covered and location. For example, the hourly price cap for doctors

[15] These estimates are likely to be conservative, the intention to leave may only be realised as leaving when other factors are in place (nothing tying you to a location or career structure – which would be the case for younger and older staff and for staff that have alternative options in the same career but not NHS).

[16] Expenditure on agency and bank staff was also high elsewhere in the UK (£0.32m in Scotland, £0.2m in Wales and £0.28m in Northern Ireland)

ranges from £20.37 for core hours for those in foundation year 1 to £101.46 for unsocial hours for a consultant.

The costs of covering staff who leave will depend on the speed with which replacement staff can be recruited, which will also be sensitive to specialty, staff grade, region and notice periods. NHS recruitment is not rapid (Trusts need to conduct various checks before candidates can be shortlisted) and financial pressures may result in Trusts not using agency cover for the entire period that a post is vacant. We estimate the additional costs incurred of cover for voluntary quits based on six months of cover - **£1.19 billion per year** – this estimate is based on covering the number of voluntary quits (107,215) in 2019/20 for six months (182 days) using the extra costs generated by employing agency staff (£54) based on the average tariff of £209 for agency staff in 2021 against an average daily rate of £155. The costs of recruitment to replace staff that leave will be in addition and would vary with the staff composition and whether recruitment was through the domestic or international market. There will also be significant administrative costs associated with arranging agency cover and costs incurred as agency staff become integrated into existing teams. We note that the estimates of the costs of turnover either taking the Oxford Economics (2014) approach to estimate lost productivity or calculating costs of employing agency staff yield very similar costs in aggregate once recruitment costs are added. We prefer this second approach because it illustrates clearly the additional costs that accrue the longer it takes to recruit new staff but caution that it is an under-estimate.

Investing in NHS staff wellbeing

Altogether the cost of poor wellbeing in the NHS in England might amount to £12.1 billion – cost of presenteeism (£6.07 billion), staff absence (£3.79 billion) and cost of the use of bank/agency staff (£2.24 billion). These estimates exclude the costs of recruitment to replace voluntary quits, any administrative costs incurred by organising the employment of agency staff or productivity losses from using agency rather than established staff. Taking this figure, recognising that this is likely to be an under-estimate, this is just over a fifth of the NHS staff spend in England, 9% of NHS England's total budget and is equivalent to 78,071,737 days of staff time - a cost of £215 per person in England, see Table 5. Given these costs, there is significant scope for investing in wellbeing. Saving just 10% could employ more than 17,000 more doctors or 34,000 additional nurses. For context, the operating profit reported by Tesco in the UK in 2020 was £1.7 billion (Statista, 2021). Being able to employ thousands of new staff would also be an effective investment for reducing the burden of mental health problems by helping to reduce workload.

For illustration purposes, we show based on the assumptions outlined above, the savings that could accrue to the NHS if wellbeing were to improve. These are evaluated using agency staff for six months to cover voluntary quits – see Table 5. If days of absence due to poor mental health were to fall by 10% there would be savings from improved wellbeing of reduced absenteeism and presenteeism plus reduced expenditure on agency staff to cover days of absence which amount to approximately £0.41 billion (3%). Savings of £1 billion might be made if days of absence due to poor mental health were to fall by 25%. If voluntary quits were to fall by 10%, reduced expenditure on agency staff could yield savings of savings of £0.1 billion (0.9%) might be made. A combined 10% reduction in days lost due to poor mental health and a 10% reduction in voluntary quits might save £0.51 billion a year (4%). These savings only relate to the costs associated with staff wellbeing, we have not included the administrative costs for a Trust of managing staff sickness or turnover and the consequences for patient care.

Summary and comment

Poor staff health and wellbeing are extremely costly. Conservative estimates suggest that these could be in excess of £12 billion per year. Our simulations suggest that improvements to mental health could lead to significant savings of up to £1 billion per year. Not only are there significant financial costs associated with failing to manage staff wellbeing, by constantly managing a response to poor health and wellbeing there are the opportunity costs of not having the time to strategise and optimise, put simply the cost of not running the service in the way that might serve the patients and staff best.

	No change	Days lost through poor mental health ¯ 10%	Days lost through poor mental health ¯ 25%	Voluntary quits ¯ 10%	Days lost through poor mental health and voluntary quits ¯ 10%
Absence	£3,793,640,225	£3,683,116,071	£3,517,329,840	£3,793,640,225	£3,683,116,071
Presenteeism	£6,069,824,360	£5,892,985,713	£5,627,727,744	£6,069,824,360	£5,892,985,713
Cost of using agency staff to cover days of absence due to mental health	£1,191,629,407	£1,072,466,466	£893,722,055	£1,191,629,407	£1,072,466,466
Cost of using agency staff for 6 months (182 days) to cover voluntary quits	£1,052,172,581	£1,052,172,581	£1,052,172,581	£946,955,323	£946,955,323
Cost of poor wellbeing to NHS	£12,107,266,572	£11,700,740,831	£11,090,952,219	£12,002,049,314	£11,595,523,573
Savings		3.36%	8.39%	0.87%	4.23%

Table 5 - Potential Savings (evaluated using agency staff for six months to cover voluntary quits)

Note: Agency costs are evaluated @ average rate of £209. Simulations assume isolated changes in days lost through poor mental health or reductions in voluntary quits and that there are no spillover effects. In practice a reduction in absenteeism or quits would reduce stress and pressure elsewhere in the NHS and yield further beneficial effects. Calculations are based on the assumptions outlined above and exclude costs of recruiting to replace voluntary quits.

Part 4 What works and logic model

Before presenting our review of the evidence that has explicitly examined changes made in NHS or primary care organisations in how work is organised, scheduled, performed and/or managed in the next section, we examine here evidence from other systematic reviews of changes to organisational and management practices from a range of sectors, before presenting a logic model of how we expect such changes to improve wellbeing.

What works?

Actions to improve workplace wellbeing are classified according to whether the underlying aim is ((Daniels, Watson et al., 2021; LaMontagne et al., 2007; Richardson & Rothstein, 2008):

- To prevent harm/promote wellbeing through changing how work is organised, scheduled, performed and/or managed;
- To prevent harm/promote wellbeing through promoting healthy behaviours (eg, nutrition, exercise, smoking cessation);
- To impart knowledge or skills to self-regulate exposure to risks to wellbeing (eg, stress management/resilience training);
- To rehabilitate those who have developed health conditions (eg, phased return to work).

The first category is the focus of this review and this evidence is discussed in the following section. Under good practice guidance, a comprehensive and strategic approach to workplace wellbeing would include elements falling under many of these broad categories. A recent survey of the scientific literature indicates all four broad categories of action can be effective (Daniels et al., 2022). However, there are important caveats noted in this review of the literature:

- There is a great deal of heterogeneity of specific actions within each broad category;
- There is greater confidence in the robustness of the evidence for interventions that are less disruptive to organisations, such as those focused on training workers to regulate their own health and wellbeing;
- The effectiveness of any action is dependent on the effectiveness of how it is implemented;
- Moreover, in respect of actions focused on how work is organised, scheduled, performed and/or managed, there is very little in the way of economic evaluation[17] of these actions (NICE, 2022b).

For actions focused on how work is organised and managed, the possible actions include: training individual workers to make improvements to their own jobs; training managers to make improvements to workers' jobs; leadership development; participatory approaches to work redesign involving teams of workers redesigning their jobs; changes to shift patterns; flexible working; changes to performance management; improved communications; clarifying job descriptions; devolved decision making; task enlargement; task rotation, team working, problem-solving groups, improvements in equipment such as IT, increased staffing or some combination of such practices

[17] One study which is an exception focused on wide-ranging improvements to how work was organised and managed in a manufacturer, supported by changes to performance management and worker training. The changes were focused primarily on improving productivity through improving safety. There was a small (4%) but statistically reliable increase in job satisfaction following the changes. However, there were larger increases in output (14%) and larger improvements in safety performance (33% reduction in accidents, 75% reduction in lost time incidents). See Tregaskis et al. 2013.

(Boorman, 2009a; Daniels, Watson et al., 2017; Daniels, Gedikli et al., 2017; Fox et al., 2022; Parker & Wall, 1998).

Scientific reviews suggest that some of the most reliable ways to improve worker health and wellbeing through changes to organising and managing work include:

- Relatively simple actions to improve social relationships in groups, such as establishing dialogue groups, group training and social events (Daniels, Gedikli et al, 2017);
- Flexible working practices (Fox et al., 2022);
- Extensive changes to work, possibly accompanied by extensive changes to supporting human resource management practices (Montano et al., 2014; Daniels, Gedikli et al., 2017);
- Training workers to initiate individualised changes to make localised improvements[18] to their own working environment (Daniels, Gedikli et al., 2017; Oprea et al., 2019).

Interestingly, reviews have found mixed evidence for participatory processes involving teams working with managers to make collective changes in a work group or department Daniels, Gedikli et al., 2017; Fox et al., 2022). It has been suggested that such participatory approaches require compromise between workers (and their managers) on what changes are to be prioritised, potentially leaving some workers (and/or their managers) dissatisfied with the changes and/or the micro-politics of how those compromises were made (Daniels et al., 2022).

Other reviews have indicated the actions focused on improvements to how work is organised and managed require favourable circumstances to be successful, including but not limited to positive attitudes to the changes or how they are to be managed by workers and their managers (Roodbari et al., in press). The conduciveness of the NHS and primary care for such actions might be questionable given high levels of staff burnout and change fatigue (see Part 1 above). However, other evidence does suggest it is possible to overcome problems associated with adverse environments for making improvements (Daniels, Watson et al., 2021).

Logic model

Our logic model is based on a number of sources (eg, Lunt et al., 2007; Schwartz et al., 1996 [19]). Other detailed references are supplied where relevant. We recognise that the logic model is a simplification that represents a range of specific and complex physiological, psychological and social process. We also recognise that differences between individuals are also influential at all stages in the process we outline, although these differences have been omitted for clarity. Moreover, for an employer as large as the NHS, at population level of the entire NHS workforce, even relatively modest improvements may have practically significant effects.

[18] These are labelled 'job crafting interventions', and there is some debate (e.g. see NICE, 2022b) about whether these are truly interventions that refer to intentional efforts by managers to make the working environment better, or whether they represent more individualised approaches that do not necessarily address structural problems in how work is organised and managed.

[19] Sources also include those listed in previous sections on epidemiological evidence and from systematic reviews of the focal interventions and their implementation.

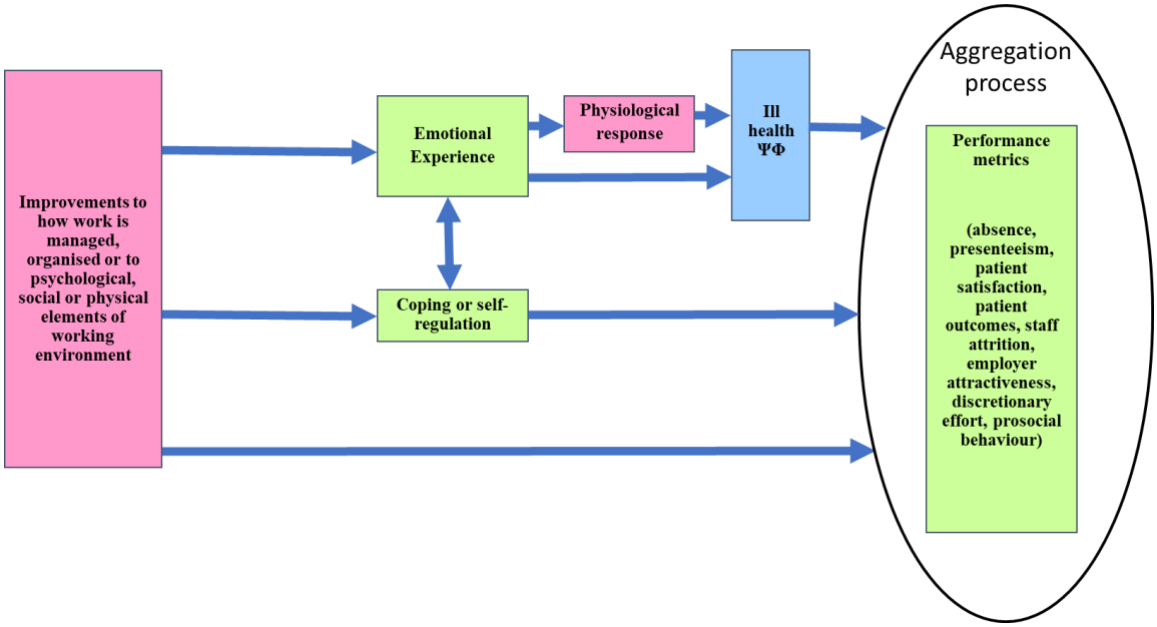

Figure. Logic model of how changes to work influence performance outcomes and wellbeing [20]

The first step in the model is that changes to the way work is managed or organised lead to improvements in work. These improvements in turn lead to more positive emotions and moods experienced at work and/or lead to enhanced capacity to cope with work demands (Karasek & Theorell, 1990). Through extended exposure to better psychological working conditions, enhanced emotional experience at work leads to better mental (ψ) and physical (ϕ) health outcomes, with physical health outcomes linked to physiological changes associated with emotional changes.

Aggregated to an entire unit or trust, enhancements to working conditions can lead to performance outcomes in various ways:

Better management or ways of doing work may have a direct effect on performance, for example because staff have the delegated authority and training to make critical decisions where and when they are needed, rather than having to seek permission to act in a certain way (Cherns, 1987).

Delegating authority and supporting workers to make decisions may help stimulate problem solving, in turn improving learning and innovation, as people learn from solving their own problems and impart that learning to others (Karasek & Theorell, 1990).

Enhanced emotional experience can lead to better patient satisfaction and to helping co-workers, because people in positive moods are more likely to exhibit pro-social behaviours (George, 1991). People who are happy with their work are also less likely to seek alternative employment (Tett & Meyer, 1993).

Enhancing health status reduces performance problems associated with presenteeism and absence (as detailed elsewhere in this report).

However, improving how work is organised and managed requires careful attention to change management processes. Three critical success factors are:

- Continuity or persistence of efforts of key change agents to implement changes;

[20] Note: model does not show differences between individuals (e.g. personality, life styles) that can also influence emotional experience, coping/self-regulation, physiology, health status and performance metrics.

- Learning from efforts to implement;
- Adapting interventions and implementation plans to be suitable to local (and changing)[21] contexts. (Daniels et al., 2022; Daniels, Watson et al., 2021)

There are various ways that help achievement of these critical success factors, including the functionality and inclusiveness of governance structures and learning structures around making the changes, connections to other workplace health and wellbeing initiatives, communication plans, the sincerity[22] with which the actions are undertaken and the behaviours of key stakeholders (senior managers, line managers, workers, service providers, 'strategic' implementers such as human resources and occupational health professionals) (Daniels et al., 2022; Daniels, Watson et al., 2021; Nayani et al., in press).

The three critical success factors are influenced in various ways by key features of the organisation, encompassing:

- The wider economic, social, technological and political environment;
- Factors internal to the organisation, such as other organisational priortities, availability of financial and other resources, and senior staff attitudes to health and wellbeing initiatives.

[21] Adapting to changing contexts is discussed in more detail in Daniels et al., 2021.
[22] The sincerity or authenticity of actions will be influenced by past attempts to address employee concerns around health and wellbeing and the extent to which the organisation is prepared and able to act on employee concerns and changes to those concerns.

Part 5 Rapid evidence review of organisational and management practices

The summary conclusions for this part are:

The evidence presented in this review on interventions in the NHS **indicates** the potential for several different ways of making improvements to how work is organised and managed in the NHS**, in turn improving facets of performance and staff wellbeing.**

- Actions focused on systemic/culture change, how working schedules are managed and improving aspects of the physical working environment were found to have generally positive effects on staff wellbeing.
- Actions focused on improving social support, automating processes and virtual working were found to have positive effects, at least for some people. Actions focused on improving the psychosocial work environment were less likely to result in improved wellbeing.
- Several of these actions have some evidence on cost-effectiveness and suggest a positive return on the initial investment made.

There were some further considerations that are relevant in this review:

- The evidence base was not as strong and extensive as we expected and this speaks to investments in building a better understanding of what works in healthcare settings in the UK.
- Many of the actions that we examined were taken in isolation and as such did not look at the wider context, broader systemic changes or interconnectedness with other components of a health and wellbeing programme.
- The evidence does not reflect on implementation and we know from other evidence that several factors are important when putting an offer in place: continuity or persistence of efforts to implement changes; learning from efforts to implement; adapting interventions and implementation plans to be suitable to local (and changing) contexts.

In this review, our core questions are:

What changes to organisational and management practices can improve staff wellbeing in the NHS and primary care?

Which of these changes are most likely to give a financial return on investment?

In the first part of this section, we focus on the first of these questions to review evidence that has explicitly examined changes made in NHS or primary care organisations in how work is organised, scheduled, performed and/or managed, and includes changes to the psychological, social and physical environments within work takes place.[23]

[23] In the academic literature and some guidance (e.g. NICE, 2022a), such changes are referred to as 'organisational-level interventions'. We believe this is a misnomer and a label that may be off-putting to practitioners because it implies significant changes throughout an

Rapid evidence review methods

In order to provide policymakers with timely advice within the resource available, this review adopted methods aimed at accelerating the process of conducting a full systematic review by shortcutting some of the usual processes (Garritty et al, 2021). This approach is sometimes called a 'rapid evidence review' and aims to achieve rapidity while balancing the robustness of the findings with their generalisability. We adopted the following strategies:

- The review process was undertaken by topic experts (KD, SC, CvS, JP, RW).
- We did not undertake double-blind screening of articles identified in the searches although other safeguarding procedures were in place (see full methods document).
- We limited the search results by date (2010 onwards only) (*post-hoc* criterion to manage workload and to focus the review on contemporary initiatives and context).
- We undertook a reduced quality appraisal process (see full methods document).

In addition to a narrative synthesis on the effectiveness for improving wellbeing of different interventions for improving ways in which work can be organised or managed, we also conducted an economic analysis of the cost-effectiveness of exemplary interventions.

Review process

As with a full systematic review the review process included identifying relevant articles, extracting and synthesising data together with a quality appraisal procedure. Briefly, we searched electronic databases for any article relevant to our review question. Resulting citations were screened against inclusion/exclusion criteria to identify relevant studies. From the included articles we extracted study characteristics and relevant outcome data.

Inclusion and exclusion criteria

We aimed to find articles published in English related to studies which met the following criteria:

Population: NHS staff or UK primary care staff (trust-level, department-level, team-level)

Intervention: organisational and management practices which changed staff jobs, for example, leadership methods, shift pattern changes, rota changes, new IT systems, provision of staff facilities (eg showers, lockers, parking), changes in elements of job design, appraisal systems

Comparison: Pre-post data and/or a comparison group.

Outcomes: Self-reported staff wellbeing: job satisfaction, life satisfaction, mental health, physical health, Burnout - Maslach Burnout Inventory (MBI), emotional exhaustion, (occupational) stress

Employee productivity: absenteeism (staff sickness rates), presenteeism, worker engagement, medical errors, patient complaints, patient safety incidents, workplace conflict incidents, discretionary effort, prosocial behaviour.

Organisation/trust productivity: Staff retention/attrition/turnover, Vacancies (number and length of), employer attractiveness / corporate image, hospital productivity (ratio of outputs to inputs) aka Total Factor Productivity (TFP), Quality Adjusted Life Years (QALYs), waiting times, quality of patient

organisation, which is itself a costly and often stressful experience. Labelling our focus as 'changes to organisational and management practices' can imply both widespread and extensive changes or more localised changes to a specific policy or specific managers' behaviours.

care/experience/safety, premature mortality, preventable mortality, (relative) case fatality / mortality / survival rate, healthcare costs/spending, improved staff facilities

Study design: Experimental studies, quasi-experimental studies and qualitative studies investigating a specific change, whether targeted at staff health and wellbeing or not, and that had at least pre- and post-change data for comparison. Ideally a randomised or non-equivalent control group would be present.

As initial searches retrieved a large number of hits we limited the search to articles published in 2010 or later.

Full details of the methods are available to access here.

Author roles

MH initiated the project. CV designed the database search strings and undertook the database searches, checked included studies and relevant systematic reviews identified in the searches for additional citations, and contributed to the report; KD, SC, JP and RW undertook screening. CvS sense checked the resulting included papers. KD, JP and JW undertook data extraction, analysis and contributed to the report. RF provided support with review methods and contributed to the report. KD undertook data synthesis. RW and SC conducted a cost-effectiveness analysis of selected interventions. All authors except JP contributed to editing the report. In addition, Professor David Gough, EPPI Centre, UCL Social Research Institute, provided support with review methods and designed the quality appraisal method.

Findings

Some 12 studies, reported in 15 papers, were identified in the analyses (see Table 6 below). References to the included studies are in Appendix D with references to excluded studies being available to access here. Of the included studies, two were focused on systemic change, three on changing aspects to the psychosocial work environment, two on providing forms of workplace support, one on changes to how working schedules (shifts) were managed, two were focused on making changes to the physical workplace environment, one on automation and one on virtual/home-based working. Two out of 12 were concerned with responses to Covid-19 (one on changes to the physical environment and one on the introduction of virtual/home-based working). Additional study characteristics are in Appendix E. Results of the quality appraisal process are in Appendix F.

Systemic change

The two studies of systemic change examined change interventions introduced in primary care (Bartlett et al., 2017) and in a hospital setting (Manley et al., 2019). Both studies were qualitative, employing pre-post- designs only.

Bartlett et al. (2017) examined systemic changes across different general practices that were focused on improving quality of working life and patient care. The practices were experiencing, for example, a lack of clinical skill set, low quality of leadership, issues with staffing levels or were inspected and recommended for improvement by the Care Quality Commission. The changes were initiated and supported by an external multidisciplinary team. Specific change initiatives were tailored to be suitable for each practice involved in the study. Bartlett et al. reported improved staff morale, better workload management, team communication, use of staff and managerial skills, improved patient scheduling and patient care.

Manley et al. (2019) reported on a patient safety initiative focused on culture/systemic change, involving and also facilitating good quality leadership, developing the capabilities of clinical teams to recommend quality improvements and collaborative learning. Manley et al. reported that the changes were associated with improved patient/staff interaction, greater staff engagement and empowerment, greater teamwork, improved communication and greater understanding and ability to maintain good standards of safety culture. Although Manley et al. do not report directly on improvements in staff health or wellbeing, they observed improvements in positive affect, staff feeling more valued, trusted, supported and mutual respect. In addition, reported improvements in learning and working practices could act as facilitators of improved wellbeing. Arguably, learning and respect from others are aspects of eudaimonic wellbeing. Manley et al. do caution that improvements in clinical leaders' role modelling of 'person-focused' values are critical for the success of culture/systemic change interventions to work.

In summary, both studies support the potential for systemic/culture change interventions and their impact on staff wellbeing and patient care. However, the evidence is limited by the small number of studies (two), although these studies, between them, do provide in-depth, longitudinal and contextually rich data. In one case (Bartlett et al., 2017), there is evidence that improvements lasted over 12 months at least. Such systemic/culture change approaches (including leadership development in a suite of activities) are reported to be successful in other contexts (Tregaskis et al., 2013). However, the changes required appear to be wide-ranging in terms of working practices (Montano et al., 2014) and may require concomitant changes in other human resource management practices (eg, training, performance management, staffing (Daniels, Gedikli et al., 2017)). However, in respect of leadership development as a standalone intervention, the evidence is less clear cut: although leadership is consistently associated with worker wellbeing, the number of intervention studies in the scientific literature is too small to draw any firm conclusions on the effectiveness of leadership development, in of and by itself, for staff wellbeing (Hillage et al., 2014; Inceoglu et al., 2018; Watson et al. 2018).

Changing the psychosocial work environment

Three studies, all in hospital settings, reported on attempts to change the psychosocial work environment, using variously, a two-day risk assessment workshop with action planning (Hill et al. 2010), a participatory action research approach over 12 months with five workshops supported by collaborative learning (Knight et al., 2017) and an e-learning package for managers to support them making improvements to the working practices for those they manage (reported in Russell et al., 2016 and Stansfeld et al., 2015). All studies were primarily quantitative, although one (Russell et al., 2016/Stansfeld et al., 2015) reported qualitative data. Two studies included control groups (Knight et al., 2017; Russell et al., 2016/Stansfeld et al., 2015). The other study used a pre-post only design. No study had a follow-up of longer than three months.

Of the three interventions, only one (Hill et al., 2010) reported any statistically significant improvements in wellbeing. In this study, out of three indicators of burnout assessed, only one (personal accomplishment) improved. There were no changes reported in the other studies on any of the variables assessed (Knight et al., 2017: no changes in worker engagement, competence, relatedness, autonomy; Russell et al., 2016/Stansfeld et al., 2015: no changes in psychological wellbeing, absence, working conditions). The only study to report improvements (Hill et al.) had the weakest design and the smallest sample size (*n* = 19).

As with studies of wider, systemic change, the evidence base for initiatives focused on the psychosocial work environment is limited given the small number of studies, and some significant

methodological problems with all of the studies. Chief among these is the short interval of follow-up (three months or less), which may be insufficient time to realise changes. In two cases, the intensity of the intervention may have been insufficient (two-day workshop, Hill et al., 2010; e-learning, Russell et al., 2016/Stansfeld et al., 2015). Moreover, Russell et al. (2016)/Stansfeld et al. (2015) report low engagement with the e-learning package among target managers, as well as scepticism about the intensity of the intervention and perceived lack of support from senior managers. However, Knight et al., (2017) report on a more intensive intervention, although the study did have a large attrition rate in the sample and there is some evidence the treatment group may not have needed the intervention (work engagement and relatedness scores were both high prior to the intervention).

Notwithstanding, as indicated earlier in this report, interventions focused on the psychosocial working environment, especially where the focus is on a narrow range of working conditions, may not be powerful enough to effect change in wellbeing. This may be the case where changes are articulated through the change process (ie, prior to risk assessments or participatory workshops, the focus of what is to be changed cannot be articulated in concrete terms). Rather more extensive change initiatives with a broad and systemic or cultural approach may be more likely to succeed (Daniels, Gedikli et al., 2017; Daniels et al., 2022; Montano et al., 2014). This may be particularly the case in the NHS. Given the NHS is highly institutionalised and potentially resistant to change, change initiatives focused on a narrow range of day-to-day working practices may not provide significant and unequivocal signals of intent compared to more widespread changes. However, this may not be the case where changes are specific and/or capable of being articulated prior to the intervention (see below), as well as being valued by staff.

Workplace support

Two studies examined interventions that provided workplace support. One examined the provision of Schwartz Rounds [24] (Rounds) in a hospital and community healthcare setting (reported in Dawson et al., 2021 and Maben et al., 2018). Schwartz Rounds provide staff support through structured and facilitated discussion of the social and emotional aspects of provided healthcare. The study was a mixed methods study, in which the quantitative elements were based on comparisons between those who had attended Schwartz Rounds more or less frequently. The second study (Wallbank & Hatton, 2011) focused on provision of clinical supervision to community healthcare professionals, using a pre-post-test only design.

Wallbank and Hatton (2011) reported improvements in terms of burnout and stress in health visitors and school nurse leaders with safeguarding responsibilities, after provision of clinical supervision which focused on emotional wellbeing at work. Wellbeing improvements suggest that supervision which is aimed at restoring the capacity to think on the job is likely to lead to better decision-making, greater ability to deal with complex situations and improved collegial relations. These improvements could potentially lead to the reduction of medical risks and errors in the work settings (p.34). However, aspects of performance or other variables were not assessed in this study. Moreover, the small sample size (n = 22) and pre-post-test only design limit the confidence of conclusions drawn from this study in isolation.

In the quantitative evaluation of the Schwartz Rounds (Dawson et al., 2021/Maben et al., 2018), there were no differences between those who attended Schwartz Rounds more or less often on a range of indicators of wellbeing and performance: psychological wellbeing, work engagement, absence, communications with patients, empathy, compassion, self-reflection and perceived

[24] Schwartz Rounds are a registered trademark activity which require a licence.

support. Quantitative analyses however did indicate a reduction in extreme psychological distress for those who attended rounds. The quantitative findings are in contrast to the qualitative findings, where reported benefits included less stress, better coping, better patient care, empathy and compassion. There might be two reasons for this apparent divergence. First there is a methodological explanation. Comparisons were made between participants that self-selected into attending Schwartz Rounds with a greater or lesser frequency. It may be the case that those, at the point of measurement, that required more support through increased symptoms were more likely to attend Rounds compared that those that did not require support. Therefore, any benefits of the Rounds may be masked by levels of symptoms at the point of measurement, irrespective of baseline measures, and therefore the analyses underestimate the true effects. Second, the qualitative evidence revealed a range of contextual factors that may have moderated the impact of the Rounds that were not accounted for in the quantitative phase. These included, but were not limited to, the provision of a safe psychological space within which the Rounds took place, trust of other members of the Round, the skill of the facilitator, senior manager support for the Rounds and the prevailing organisational culture.

As noted, in each study, there were specific methodological problems, and that there were only two studies also limits confidence in conclusions drawn from the studies. However, the wider literature does indicate actions to improve the social climate at work are relatively simple, tangible and effective (Daniels, Watson et al., 2017). However, in their review of this literature, Daniels et al. (2017) did note some important caveats, such that initiatives to improve workplace social climates require several elements (eg, group training, social events, problem-solving circles), external facilitation and need to be on-going. Arguably, neither Schwartz Rounds nor a limited course of clinical supervision meet all these criteria, notwithstanding external facilitation in both cases. Further, the contextual factors identified in the study of Schwartz Rounds (Dawson et al., 2021/Maben et al., 2018) highlight the need for systemic actions focused on developing a prevailing culture to support and sustain specific initiatives.

Working schedules

One qualitative study examined the introduction of a flexible rostering system for student nurses doing clinical work (Brook & Kemp, 2021). This employed a pre-post-test only design, with a small sample of non-qualified student staff (*n* = 14) with a short-term follow-up (under three months). The students participating in the study reported feeling less anxious and happier at follow-up. They also reported enhanced learning due to feeling less anxious. There were some costs in additional management time associated with co-ordinating the new rostering system. Although the evidence from the NHS is extremely limited, flexible working initiatives appear to have a greater chance of success for improving staff wellbeing than many other forms of re-organising working practices (Fox et al., 2022).

Changing the physical workplace environment

Two studies examined changes to the physical working environment. One of these (Blake et al., 2021) examined a multi-component intervention in response to the Covid-19 crisis in a hospital setting, which included the provision of rest spaces in the staff wellbeing centres. This intervention collected data less than three months after the introduction of the intervention, with baseline inferred from pre-pandemic levels. In the circumstance, it is reasonable to assume threats to health and wellbeing were lower pre-pandemic. The other study used a cluster randomised design with follow-ups going up to 12 months of the introduction of height adjustable desks in a hospital setting (reported in Edwardson et al., 2018 and Munir et al., 2020). Both studies evidenced some improvements.

In relation to rest spaces, spaces were open to both clinical and non-clinical staff. These areas facilitated psychological self-care by providing quiet spaces for recovery, as well as social interaction and emotional support from colleagues. They were also equipped with refreshments and provided space for an additional intervention of emotional support from wellbeing buddies if required. It is possible, even probable, that any impact of rest spaces may have been influenced by the presence of welcome social contact from the buddies trained in psychological first aid. Nevertheless, participants in Blake et al.'s study attributed lower anxiety, stress and exhaustion along with better team work to provision of rest spaces and the social interaction afforded by them. Participants in this study did express concerns that the spaces would no longer be available after the crisis.

In the study of height adjustable desks (Edwardson et al., 2018/Munir et al., 2020), participants reported sitting at work on average for just under six hours a day. Therefore, the intervention may be applicable to primarily desk-based workers. There were a number of improvements that were sustained at 12 months' follow-up, including lower anxiety and fatigue alongside higher levels of work engagement, quality of life, productivity and physical movement. However, a number of indicators did not change over time, including job satisfaction, absenteeism, presenteeism, 11 out of 14 indicators of muscular-skeletal heath, 30 out of 36 indicators of wellbeing and seven out of eight indicators of cognitive performance. There were also increases in hostility at 12 months. Nevertheless, overall, height adjustable desks with education on movement were largely associated with benefits and the authors concluded that the intervention delivered savings to the hospital through improved productivity.

Changes to the physical work environment are tangible and produce salient changes to how work is conducted. Changes to the work environment may also influence how workers interact with colleagues and/or with patients (cf. Blake et al., 2021) or act in a symbolic way to signal changes in workplace cultures (Johnson, 1987). Notwithstanding, the heterogenous nature of such interventions and their intended mechanisms for affecting change in health, alongside the small numbers of studies in NHS settings, does weaken confidence in the overall conclusion, notwithstanding the rigorous nature of the study on height adjustable desks.

Automation

James et al. (2013) examined the introduction of an automatic dispensing system in a hospital pharmacy including the redesign of working environment at the pharmacy dispensary. The study employed a pre-post-test only design using mixed methods. The final sample size for the quantitative analyses (n = 16) limits confidence in the power of statistical tests to detect changes. Notwithstanding, there were statistically reliable reductions in job stress, although no reported changes in job satisfaction, organisational commitment or working and employment conditions. However, qualitative analyses did indicate a diversity of experiences in relation to working and employment conditions, with some staff reporting enhancements and others reporting deterioration. Similarly, a study of introducing robotic pharmacy technologies in the NHS in Scotland (Findlay et al., 2017) also found a diversity of experiences in working and employment conditions although for most people, changes were positive rather than negative. In terms of productivity, James et al. found a large decrease in dispensing errors and a large increase in items dispensed per hour. Staff attributed reductions in job stress to improvements in reliability of dispensing.

Although one intervention study with a small sample size cannot provide anything other than initial evidence on the benefits of automating some aspects of work in the NHS, Gorny and Woodard (2020) provide evidence that the association is due to the nature of automatable jobs and that embracing automation can enhance and make time for the more interesting and satisfying aspects

of jobs. Moreover, evidence from other sectors does indicate that improvements in technology can increase productivity and wellbeing, *provided* the technology enhances working experiences and safety (eg Parker & Wall, 1998; Tregaskis et al., 2013).

Virtual/home-based working

Hughes et al. (2021) reported on the move to homeworking in response to the Covid-19 pandemic, with some nurses providing patient care and support virtually. Like Blake et al. (2021), the Covid-19 pandemic represents an external shock to working environments and staff, therefore this situation was inferred to be better than during the shift to homebased and virtual working. Participants reported mixed outcomes. There was greater fatigue associated with a large number of online clinics when providing virtual care. There were also feelings of peer pressure to work longer hours/more quickly when at home. Other problems reported included difficulties in maintaining work-life balance, concerns with dehumanisation of care, and problems using the technologies for some patient groups. On the other hand, participants reported less stress from being able to perform administrative tasks in a quieter environment without the worry of finding the ideal hot desk in a hospital setting, benefits to teamworking, improved patient care, learning from being able to participate virtually in multidisciplinary team meetings, and fewer problems with patients missing appointments.

Again, because there is only one study, there is limited confidence in the conclusions we can draw on the benefits of homebased and virtual working for NHS staff wellbeing, productivity and patient care. As a form of flexible working, it could have benefits for workers and for productivity (Bloom et al., 2015). However, in the majority of cases pre-pandemic, homebased working was usually a voluntary option that allowed workers to tailor their working environment to personal preferences. Moreover, the shift to homeworking during the pandemic may have had adverse effects on the productivity of a minority of employees (Felstead & Reuschke, 2021), indicating that homebased working may not be suitable for all workers. An important caveat is that working from home should not just be seen as provision of information technology. There is a requirement for adequate policies and risk assessments as highlighted by Hughes et al. (2021). Furthermore, how homeworkers are managed and supported might be important for wellbeing and productivity (Fitzhugh & Daniels, 2020).

Managing the impact of Covid-19

Two studies (Blake et al., 2021; Hughes et al., 2021) also reviewed the above examined initiatives to off-set the impact of Covid-19 on healthcare staff (eg, increased intensity of working, greater exposure to infection). In both cases, there was evidence for benefits for wellbeing and performance. One concern (voiced in Blake et al., 2021, but also applicable to Hughes et al., 2021) is that changes that are introduced that have benefits for staff wellbeing may be taken away when returning to 'business as usual'. Removing benefits may have a disproportional effect in terms of reductions in wellbeing compared to the provision of benefits in the first place on enhanced wellbeing.

Study	Research Design	Type of intervention	Population	Self-reported wellbeing	Employee Productivity	Organisation/Trust productivity
Bartlett (2017)	Qualitative study	Other – different interventions for each practice *	Primary care - clinical Primary care - clerical	Job satisfaction Burnout	Prosocial behaviour Employee productivity Other performance outcome *	Waiting times Quality of patient care/experience/safety
Blake (2021)	Qualitative study	Changes to physical environment	Secondary care - clinical Secondary care - clerical	Job satisfaction Anxiety Emotional exhaustion Occupational stress	Absenteeism Presenteeism Medical errors Prosocial behaviour	Quality of patient care/experience/safety
Brook (2021)	Process evaluation	Rota changes	Secondary care - clinical	Affective wellbeing	Other performance outcome *	Not reported
Dawson (2021)	Non-controlled Qualitative study Process evaluation	Communities of practice/action learning sets or similar	Secondary care - clinical Secondary care - clerical	Psychological wellbeing Other wellbeing outcome *	AbsenteeismWorker engagement Other performance outcome *	Other performance outcome *
Edwardson (2018)	Experimental Economic analysis	Changes to physical environment	Secondary care - clinical Secondary care - clerical	Job satisfactionAffective wellbeing Physical health Other wellbeing outcome *	Absenteeism Presenteeism Worker engagement Employee productivity Other performance outcome	Not reported
Hill (2010)	Quasi-experimental	Job (re)design Team (re)design	Secondary care - clinical	Burnout	Not reported	Not reported
Hughes (2021)	Qualitative study	Flexible working	Secondary care - clinical	Emotional exhaustion Other wellbeing outcome *	Worker engagement Discretionary effort Employee productivity	Quality of patient care/experience/safety

James (2013)	Quasi-experimental Process evaluation	Job (re)design Changes to physical environment	Secondary care - clinical	Job satisfaction Occupational stress	Medical errors Employee productivity Other performance outcome	Employer attractiveness/corporate image
Knight (2017)	Quasi-experimental	Job (re)design Team (re)design Communities of practice/action learning sets or similar	Secondary care - clinical	Eudomonic wellbeing	Worker engagement	Not reported
Manley (2019)	Process evaluation	Leadership methods Communities of practice/action learning sets or similar Other	Secondary care - clinical	Psychological Wellbeing	Worker engagement Medical errors Other performance outcome *	Quality of patient care/experience/safety
Russell (2016)	Experimental Qualitative study Process evaluation	Leadership methods Job (re)design Team (re)design	Secondary care - clinical Secondary care - clerical	Psychological Wellbeing	Absenteeism	Not reported
Wallbank (2011)	Non-controlled	Leadership methods	Primary care - clinical	Burnout Occupational stress	Worker engagement Medical errors	Not reported

Table 6 Included studies (See Appendix D for further details)

Cost-benefit analysis of selected interventions

Having established the context of low wellbeing in the NHS and the related costs, the focus of the majority of studies in our review is on the important question of which changes to organisational and management practices can improve staff wellbeing in the NHS and primary care. However, with one exception, the financial benefits and costs which constitute the business case, are generally not considered in these studies. To assess the business case, we consider five case studies taken from the 12 review studies to give an indication of the cost-effectiveness of such interventions. There is no one-size-fits-all approach to elicit financial costs and benefits, so we use a bespoke methodology for each. We have chosen the five studies with enough detail to give us the best chance of inferring the costs and monetising the benefits, while also covering the different types of changes considered. The studies chosen are Edwardson et al. (2018)/Munir et al. (2020) (desks); Dawson et al. (2021)/Maben et al. (2018) (Schwartz Rounds); James et al. (2013) (automated dispensing); Manley & Jackson (2019) (systemic/culture change); and Brook & Kemp (2021) (flexible schedules). Therefore, these exemplars cover most of the types of intervention reviewed above that show evidence for some benefits.

Changing the physical workplace environment

Munir et al. (2020) is explicitly a cost-benefit analysis which directly addresses the business case – differentiating it from the other papers in our review. The randomised controlled trial (RCT) of the Stand More AT (SMArT) work intervention (also see: Edwardson et al., 2018) involved introducing height adjustable desks for office workers. Direct and indirect costs, as well as financial benefits through improved productivity, are considered to give a net saving from the intervention over a year. The direct costs include the cost of the SMArT work desks themselves, installation costs, removal of old desks, and dissemination of information relating to use, including a seminar, posters and coaching, as well as researcher time to assess feedback. These direct costs amounted to £595 per participant. Indirect costs relate to worktime lost by participants to set-up the SMArT desks, to attend seminars and coaching, and to provide feedback. These indirect costs amounted to £97.40 per participant, meaning total costs of £692.40 per participant.

To assess productivity changes, Munir et al. consider self-reported presenteeism and absenteeism at baseline, and then at three, six and twelve months post-intervention, comparing the mean value to the baseline. They also consider employer-reported absenteeism of participants. While they found no statistically significant change in absenteeism (neither self- nor employer-reported), they did find significant productivity gains through reduced presenteeism in the treatment group compared to the control group, amounting to a saving of £2,462.72 per participant over one year (52 weeks). This gives a net saving of £1,770.32 just one year after the intervention was introduced, with an impressive return on investment of 256%. A return which could be even larger if these benefits continue into subsequent years since the bulk of costs were start-up costs related to purchasing the equipment. The authors note that there were also price differences in the equipment assigned which did not result in productivity differences, so costs could be reduced by purchasing the less expensive non-electric desks. Finally, the nature of the RCT meant that participants did not choose to have the desks, and some did not engage with them. With self-selection, benefits could potentially be higher for participants (average not reduced by those not engaging) or costs lower if desks were only provided to those wanting to use them.

Workplace support

Our second case study is for the Schwartz Rounds intervention (reported in Dawson et al., 2021 and Maben et al., 2018). Schwartz Rounds are a registered trademark activity which require a licence

through the Point of Care Foundation (PoCF). [25] The cost of this licence, which includes training and other operational support, is £15,960 for NHS trusts for the first two years, so £7,980 per year. After two years, Trusts can switch to a two-yearly 'membership' model which is £3,780 for large organisations and £1,680 for small organisations. For the purposes of the current cost analysis, we consider the higher initial licence fee of £7,980 per year. In their full realist informed mixed-methods evaluation, Maben et al (2018) detail these licence fees as well as other direct costs for food and advertising of the Rounds which come to £225 and £25 per Round, respectively. Their interviewees revealed that ten Rounds per year felt feasible (monthly while avoiding holiday periods in winter and summer), giving annual direct costs of £2,250 (food), £250 (advertising) and £7,980 (licence), totalling to £10,480 per year.

However, the bulk of the costs come from the indirect costs of staff time. Schwartz Rounds require a Facilitator (5-6hrs/month), Clinical Lead (4hrs/month), Administrator (5-6hrs/month) and 8-12 members of a steering group (2-3hrs/month each). Maben et al. estimate these staff costs to be £2,000 per month or £24,000 per year for medium-large organisations. Finally, while not all participants attended during work time, it seems reasonable for their time costs for attending the Rounds to be accounted for. According to Maben et al., the number of attendees varied with a range of 17 to 150. They give an average food price of £5 per head, which suggests an average of 45 participants attending each Round. Given that time to attend Rounds has already been allotted in the workloads of the facilitator, clinical lead, and steering group members, that leaves around 33 participants attending 10 one-hour Rounds per year. At the average daily wage of £155 reported, which is £19.38/hr assuming an 8hr day, the time costs of attending the Rounds are £6,395.40 per year. Altogether that is £10,480 in direct costs and £30,395 (£24,000 + £6,395) in indirect costs, meaning total costs of £40,875.40 per year. With an average attendance of 45, that is £908 per participant per year. As highlighted by Maben et al, these costs could be reduced by increasing the number of attendees, as only the indirect costs relating to participants would increase.

In terms of benefits of the Schwartz Rounds, the authors do not report monetary values, but they find a statistically significant decrease in psychological distress cases (as measured by scores on the General Health Questionnaire (GHQ-12) [26]) which fell from 25% to 12% in the treatment group. Even though Dawson et al., 2021/Maben et al. 2018 did not find evidence that Schwartz Round attendance was associated with decreased absenteeism, as noted above, the effects may have been underestimated and/or short-term. To provide another estimate on absence of a reduction in psychological distress cases, we used data provided by Whittaker et al. (2012). Whittaker et al. found that sickness rates were substantially higher for those who reported GHQ-12 caseness, with an odds ratio of 4.41, using the British Household Panel Survey. This suggests that those reporting caseness have more than four absence days for each one day of a non-case. Given the high levels of absenteeism in the NHS of 14.51 absence days per person per year and an average of 4.4 days due to poor mental health, this is likely to imply financial savings. Assuming the initial makeup of the treatment group of 25% cases and 75% non-cases and the odds ratio of 4.41 of Whittaker et al., this would imply the former have 33.1657 absence days to the 7.8327 absence days of the latter (0.25*34.5420 + 0.75*7.8327 = 14.51). Post-treatment, we have 12% cases and 88% non-cases which would imply 11.04 average absence days (0.12*34.5420 + 0.88*7.8327 = 11.04), a reduction of 3.4722 absence days. Given the average daily wage of £155 and the typical additional 25% of salary costs for national insurance and pension contributions reported earlier, this would be a saving of £673 per participant per year.

[25] https://www.pointofcarefoundation.org.uk/our-programmes/staff-experience/whats-involved-starting-rounds/
[26] Goldberg D. GHQ and psychiatric case. Br J Psychiatry. 1979;134(4):446–7.

There is also evidence of a negative relationship between physiological distress and presenteeism (eg, Coutu et al., 2015; Oshio et al., 2017), especially in healthcare occupations where errors can be safety critical (Niven & Ciborowska, 2015). As it is difficult to put a figure on the extent of the effect on presenteeism, we use our earlier assumption that twice as many days are lost to presenteeism compared to absenteeism. This gives estimated benefits of Schwartz Rounds of £1,749 (absenteeism savings of £673 plus presenteeism savings of £1,076), giving net benefits of £841 per participant per year (£1,749 savings minus £908 costs).

Automation

Our third case study is the use of Automatic Dispensing Systems (ADS) in Pharmacies (James et al., 2013). The study itself did not provide a cost-benefit analysis but we have identified earlier studies from the USA which suggest that ADS may be cost effective. Lee et al. (1992) find net benefits of $35,000 annually, despite high costs of $215,000; while Wise et al (1996) find annual savings through saved nurses' and pharmacists' time of $80,910, net of rental costs of $27,780. However, due to technological progress and the age of these studies, as well as significant differences between the health services of the USA and UK, these figures might not be deemed as relevant for the NHS.

A more recent and relevant study, Chapuis et al. (2015), considered the use of an ADS in each of three adult ICUs in a university hospital in France. They suggest initial costs of €40,500 for each ADS and €4,500 for the related software (one-off cost, not per ADS). For the three ADS, this amounts to initial costs of €126,000, but there were also some immediate savings from reduced drug storage, meaning cashflow in year 0 was -€81,702. However, this initial investment is comfortably repaid, with additional financial gains on top, by year one cashflows of €126,188. Chapuis et al. track cash flows up to year five from installation, accounting for additional costs such as technician costs and maintenance costs as required, giving cashflows of €128,372; €135,772; €136,302; and €148,229 in years two, three, four and five respectively. The main savings came in the form of saving nurse time and reduced wastage from drugs becoming outdated, which are among the benefits identified by James et al. (2013) who also report fewer job stressors, more logical workloads, less work-life conflict, fewer medical errors, better storage and saved time. The particularly interesting aspect of ADS is not just their cost effectiveness, but how the increases in efficiency they bring save time which helps improve wellbeing, while also reducing medical errors. While some support a fear-based explanation for this (Schwabe & Castellacci, 2020; Mokyr et al., 2015), ie workers report low job satisfaction as they worry about being replaced, Gorny & Woodard (2020) give evidence that the association is due to the nature of automatable jobs and that embracing automation can enhance and make time for the more interesting and satisfying aspects of jobs.

Systemic change

The fourth case study relates to leadership culture. This is analysed by Manley & Jackson (2019) and while their study focuses on culture change, we simplify in order to assign financial costs. One element of this culture change was the introduction of 'safety huddles' which are (usually weekly) opportunities to walk through wards as a team and identify any safety issues and opportunities to improve best practice in real time. They provide a forum for discussion of patient safety issues, while detecting risk factors and preventing harm. The main costs involved are training which was given in the form of a four-day Institute of Health Improvement Accelerated Patient Safety Programme and the staff time of conducting the huddles. A study by Crosswaite et al. (2018) estimated the return on investment on two types of safety huddles: one focused on reducing inpatient falls and one on reducing cardiac arrests. For the former, they estimate weekly costs of £141 per ward and find that this reduced falls by 0.1125. Given the cost of falls of £2,600, this gives an estimated weekly saving of £293 per ward. Overall, this gives a net weekly saving of £152 per week, which amounts to an

annual net saving of £7,878 per ward. Crosswaite et al. also argue that the staff time accounted for in the costs is not additional staff time, but rather displaces other activities such as fall reviews which are done after the event and other more disjointed activities (no additional ward time was actually required).

For the second type of safety huddle focused on reducing cardiac arrests, Crosswaite et al. estimate a cost of £100 weekly per ward and a reduction in cardiac arrest calls of 0.02. This smaller reduction means that these huddles are not cost effective if the staff time is considered to be additional. However, Crosswaite et al. argue that no additional ward time is required since their study identifies that the huddle displaces activity that would have occurred in the event of cardiac arrest, and therefore conclude that they are cost effective. This case study is also a good example of there being additional costs/benefits which we struggle to monetise such as the distress of additional cardiac arrests, the opportunity cost (not just realised costs) of calling emergency staff and the benefits for wider society (also to family/friends/employer, etc.) of avoiding events such as cardiac arrests. It is also a reminder that the business case is not the sole determiner of best practice, with the legal obligation and moral case to ensure high standards of patient care being primary goals of the NHS.

Working schedules

The final case study is flexible rostering evaluated in Brook & Kemp (2021). This intervention allowed the scheduling of nursing and midwifery students' rotas to be done via Microsoft Excel before placements and allowed students to determine their own schedule. As students are supervised and assessed as part of their placements, students were allowed to have multiple assessors assigned to them to enable this flexibility, but this seemed to work for students and assessors. The main costs were the time taken to organise the students' choices, but there were also time savings due to fewer requests to change/swap shifts, fewer complaints, less absenteeism and happier students. There were other benefits such as students feeling empowered to have control over their placement. Some issues did arise around not prioritising ward needs, cooperation with colleagues and continuity of care, but interviewees felt these could be fairly easily solved with implementation guides. Nasamu et al. (2021) analyse a similar spreadsheet-based flexi-time scheme introduced for a student support office in a university (n=132). They consider participation, delivery and other costs of implementing the scheme totalling £6,844. The bulk of these costs (£4,820) relate to the planning and setting up of the scheme rather than the ongoing delivery. Monthly staff sickness days per participant fell from 0.84 days to 0.5 days following the intervention, an overall saving of £4,575. This works out as a net cost of £17 per participant to implement the intervention, with likely cost savings once the systems are established. The organisation could also be done by scheduling software.

Discussion

The evidence presented here does indicate the potential for several different ways of making improvements to how work is organised and managed, in turn improving facets of performance and staff wellbeing. Actions focused on systemic/culture change, how working schedules are managed and improving aspects of the physical working environment were found to have generally positive effects on staff wellbeing. Actions focused on improving social support, automating processes and virtual working were found to have positive effects, at least for some people. Actions focused on improving the psychosocial work environment were least likely to result in improved wellbeing, although in the two studies reporting no effects, the absence of benefits could be explained by either there was no need for any change (Knight et al., 2017) or that intervention was low intensity (Russell et al., 2016/Stansfeld et al., 2015). In terms of economic benefits, the evidence indicates most of the types of interventions reviewed (specifically changes to physical environment, workplace support, automation, systemic/culture change and flexible scheduling) have the potential

to realise savings through, for example, reductions in absence and adverse events such as medication errors and patient falls. This speaks to the current and costly low levels of wellbeing in the NHS and that there is a large scope for improvement. However, it also means that these interventions are currently taking place in a poor wellbeing environment and that they could function more effectively in a more conducive environment.

There are three caveats to the overall conclusions. The first of these relates to the strength of the evidence and the second and third to the nature of intended improvements and how those improvements are managed.

Strength of evidence

In relation to the strength of evidence, like other reviews focused on wellbeing interventions in healthcare (Brand et al., 2017) or focused on changing how work is organised and managed (eg, Daniels, Gedilki et al., 2017), this review was based on a limited evidence base. This applies to drawing conclusions about effectiveness on both wellbeing and economic outcomes.

Some of the interventions could lay claim to providing strong evidence for positive change in of and by themselves, for example through richness of data collection (systemic/cultural interventions, Bartlett et al., 2017; Manley et al., 2019) or strong and appropriately powered randomised control designs (eg, height adjustable desks (Edwardson et al., 2018/Munir et al., 2020)). However, drawing firm conclusions is restricted by the small number of studies, heterogeneity of interventions and samples, and generally weaker designs and/or smaller sample sizes.

That point made, absence of evidence that meets the standards of scientific rigour developed for assessing much simpler kinds of treatment should not be used to justify absence of action. As noted elsewhere in this report, multiple large-scale scientific studies have provided robust epidemiological evidence that factors linked to how work is organised and managed are associated with deterioration in mental health and development of other health problems (Rugulies, Aust & Madsen, 2020; Stansfeld & Candy, 2006; Kivimäki et al., 2012; Milner et al.,, 2018; Then et al., 2014). Added to this, there is a regulatory requirement (1974 Health and Safety at Work Act), a policy commitment (acceptance by the NHS of the Farmer-Stevenson recommendations) and long-standing advice (Boorman, 2009b) to improve how work is organised and managed in the NHS, especially given the working conditions currently reported by its staff.

The nature of intended improvements

With the exception of two studies focused on systemic/cultural changes, many of the interventions were more limited in focus. Some of these changes were easily articulated and salient through changes to the physical environment or presence of others (eg, Schwartz Rounds, clinical supervision, flexible rostering, rest spaces, height adjustable desks, virtual working, introducing robots into dispensaries). These more easily articulated changes tended to be associated with more benefits for wellbeing compared with those interventions focused on the psychosocial work environment. Elements of the psychosocial work environment (eg, job autonomy, skill use, qualitative work demands) are not concrete, visible or readily explained in non-technical language. The limited success of such interventions reported here and in other reviews (Daniels, Gedikli et al., 2017; Fox et al., 2022) may reflect that such interventions do not provide signals that are sufficiently salient for workers to notice any differences in how work is managed unless such changes are extensive (Bowen & Ostroff, 2004, cf. Montano et al., 2014; Daniels, Gedikli et al., 2017. In contrast, systemic/cultural changes provide multiple signals or more concrete changes (eg to desks) provide readily noticeable signals. Systemic/cultural interventions would also usually subsume changes to how work is organised and managed as part of the change process, as well as improvements in social

relations at work (see Manley & Jackson, 2019). How work is organised is a key element that reinforces prevailing cultures, and so the routines through which work is managed and organised can form an important element of culture change (Johnson, 1987).

None of the studies included in the review involved extensive commitment of resources to addressing chronic issues identified as facing the NHS (see earlier in this report) in respect of staffing and staff attrition. However, one study from Australia, does indicate that increasing staff numbers along with other changes to manage workloads and support staff, can lead to benefits for staff wellbeing and reduce staff turnover (Rickard et al., 2012).

The studies included in the review also do not capture what happens in many organisations in practice, in which a specific change, initiative or action is implemented as part of a programme of activities, which may include an Employee Assistance Programme, rehabilitation services for those returning from sick leave, healthy lifestyle promotion activities (eg, advice on smoking) and/or flexible working. Indeed, a range of sources on good practice recommend such a multi-faceted and programmatic approach, including those that the NHS commissioned (Boorman, 2009b), that the NHS otherwise pays attention to (NICE) and have agreed to implement (Stevenson & Farmer, 2017). A range of initiatives, actions and services may combine to provide noticeable signals that the organisation is acting on staff wellbeing, engendering employee perceptions of authentic organisational support for wellbeing (Nayani et al., in press) that in turn promote wellbeing (Daniels, Fida et al., 2021) and an organisational culture within which it becomes easier to implement new practices focused on staff wellbeing as programmes evolve to meet changing employee concerns (Daniels et al., 2022; Nayani et al., in press). However, if limited changes are made that do not address employee concerns or that are undermined by other practices that signal little or no regard for staff concerns or wellbeing, then any changes may have limited or no effects, or even engender employee cynicism concerning the real motives for the limited changes (Daniels et al., 2022; Nayani et al., in press). Such concerns in the NHS may relate to workload and the ability/space to take appropriate rest breaks.

Any multifaceted approach to improving wellbeing could also address multiple aspects of how work is organised and managed, potentially subsumed under a wider cultural approach. To obtain the best chance of making a multifacted approach cost-effective and deliver a return on investment, only those specific changes (eg, flexible schedules, safety huddles) that are likely to be cost-effective should be incorporated into a multifaceted approach.

How to make improvements

As noted earlier in this report, how changes to work are made influences whether those changes confer benefits to staff wellbeing. The literature has identified three critical success factors (Daniels, Watson et al., 2021):

- Continuity or persistence of efforts of key change agents to implement changes;
- Learning from efforts to implement;
- Adapting interventions and implementation plans to be suitable to local (and changing) contexts.

Each of the critical success factors indicates fostering staff wellbeing is an evolving process that requires continuous adaptation and development. As noted above, this evolving process should involve a wide range of activities including those focused on promoting wellbeing through the management and organisation of work. Moreover, guidance on good practice, for example the

Health and Safety Executive Management Standards for Work-Related Stress (https://www.hse.gov.uk/stress/index.htm), recommend incorporation of continuous improvement processes.

There are various elements that contribute to achieving these critical success factors, including the functionality and inclusiveness of governance structures and learning structures around making the changes, connections to other workplace health and wellbeing initiatives, communicating a clear and coherent approach to staff wellbeing, the sincerity with which the actions are undertaken and the role of key stakeholders. Two studies in this review also indicate the importance of senior leaders in sponsoring change efforts, including role modelling appropriate behaviours (Bartlett et al., 2017; Manley et al., 2019). Research in other sectors also indicates the importance of senior leaders communicating the importance of staff wellbeing and commitment (and communication of commitment) of tangible resources (Daniels et al., 2022) especially during times of crisis (Nayani et al., in press). Senior leaders may be especially important in effecting changes that challenge existing norms and practices that are detrimental to wellbeing (eg, around tolerating abusive supervision and labelling it 'robust performance management') and replacing those norms and practices with other beneficial norms and practices.

The evidence base on the economic effects of different approaches to implementation is very limited and we are not aware of any relevant analyses.

Further research

Some of the studies in this review did engage in realist evaluation (Pawson & Manzano-Santaella, 2012) that encompasses how to manage the process of making improvements (Manley et al., 2019; Russell et al., 2016/Stansfeld et al., 2015). The aim of realist evaluation is to delineate how elements of the context surrounding a specific intervention influence whether that intervention 'works', and so addresses the famous 'what works for whom and in what circumstances' question. Such research is invaluable in terms of evaluating specific initiatives and how prevailing organisational contexts (eg, access to other wellbeing services) may influence whether any specific initiative around the work environment confers benefits. However, because the unit of analysis in realist evaluation is a discrete intervention, we also recommend research on workplace wellbeing in the NHS be supplemented by more extensive analyses focused on understanding long-run changes in organisational cultures that support or do not support wellbeing (Patey et al., 2021) in order better to understand how systemic/cultural change can be implemented and sustained at scale (eg at Trust rather than ward level). Such research, using for example in-depth longitudinal case analyses, can capture both changes that are implemented by management, changes implemented outside of management awareness, how programmes of activities are managed and how conflicts with other organisational processes are reconciled, and synergies between different practices. To provide evidence on estimated costs and benefits of long-run, systemic changes, qualitative data could be supplemented with statistical analyses of administrative data from case organisations (eg, absence, turnover, patient satisfaction) using time series techniques.

Part 6 Conclusions and recommendations

This review sets out the business case for investing in the health and wellbeing of NHS staff. The findings show the extensive cost of poor health and wellbeing and makes a strong argument for investing in the health and wellbeing of NHS staff. This is important as better staff health and wellbeing is associated with improved financial performance among healthcare providers and, most importantly, with improved quality and safety of patient care as well as better patient outcomes. The wellbeing of a workforce is woven into the fabric of the organisation and its buildings. From this perspective, this review is consistent with previous work undertaken as part of the Boorman Review in 2009 (Boorman, 2009a; 2009b) and policy documents such as the 'Five Year Forward View' published in 2016 (NHS England, 2016) and the People Plan 2020/2021 (NHS England, 2020a), with its 'People Promise'. These documents have the aspiration to make the NHS one of the best and healthiest places to work. **The study sets out that investments in the health and wellbeing of staff are not only necessary but also relatively affordable in terms of overall spending on health in England and the longer term returns that such spending brings.**

In order to achieve this, several challenges need to be engaged with.

The NHS is in the midst of a workforce crisis that currently impacts the safety and quality of healthcare. The pandemic required an extraordinary response from healthcare workers. The delays in treatment following the pandemic demand a sustained effort to ensure the best possible quality of care. A formidable backlog of urgent and elective care now exists. Shortages of skilled staff as exemplified by the recruitment drives for overseas nurses and high levels of vacancies make meeting this challenge more difficult. Many of these staff shortages pre-date the pandemic and speak to wider structural issues in managing the workforce. Funding for the Service had failed to keep pace with the demands of a growing and ageing population (Appleby, 2015). Increased work pressure and intensity are having a negative impact on the health and wellbeing of NHS staff. Of particular concern is the deterioration of mental health and wellbeing of NHS staff during the pandemic. This crisis comes at a time of workforce shortages in other parts of the economy (and even a shrinking post-pandemic labour force) and also worsening health and wellbeing of UK employees across the economy over time. The cost to the NHS of poor health and wellbeing, staff turnover and the use of agency staff is set out in this report.

The NHS started the pandemic with significant health and wellbeing challenges. There were high levels of obesity and poor mental health among nursing and healthcare assistants, social care workers, and ambulance staff compared to other NHS workers. A large majority of NHS staff reported at least one dimension of work-related stress. NHS staff reported high levels of bullying compared to other employers and a significant number experienced violence. It seems obvious that NHS staff have been feeling the strain for quite some time (Appleby, 2021).

The public's sense of solidarity and engagement with NHS staff, that helped to support them through the pandemic, may be wearing off. As the review points out the latest NHS staff survey shows some worrying declines in measures of wellbeing and engagement (NHS, 2022). The Service stepped up during the pandemic with significant investments and interventions to support staff including quicker access to counselling and 'wobble' rooms for instance (NHS England, 2020b). There are now worries that some of these interventions cannot be sustained, even when the Service is trying to catch up on delayed care. This review looks at wider organisational and management practices that could support staff health and wellbeing and their financial return.

There is a significant variance within the NHS on how staff health and wellbeing is managed. Some NHS employers are far more effective in promoting good health and wellbeing. This can at times be

explained by geography with certain NHS employers drawing its workforce from populations with better underlying health and wellbeing. However, as this report shows, organisational culture, staff engagement and the type of programmes that are put in place matter as well.

The key recommendation from this review is that there is no silver bullet or quick fix to address these challenges. **This study calls for systemic and sustained changes in organisational cultures within NHS organisations** in the enhancement of wellbeing and prevention of mental health problems. Such cultural change could encompass many different initiatives, including some of the specific interventions included in the evidence review (eg, flexible working, Schwartz Rounds). They must also extend well beyond the *ad hoc* measures put in place during the pandemic. However, systemic culture change would not rely on such initiatives operating in isolation, but would combine them into a managed and resourced programme of activities. This is about: the cohesion of the approach taken to improve the health and wellbeing of staff; the support of this agenda at all levels of the organisation (including the senior leaders); a sustained commitment to improving health and wellbeing; engagement with staff and promotion of the programme; and innovation in terms of the offer to staff.

Such culture change may seem daunting in terms of the challenges that the NHS is facing currently. However, there have been other sector-wide responses in the past. Following the Piper Alpha disaster in 1988 in the North Sea, Lord Cullen, who chaired the Inquiry into the disaster, stated '*It is essential to create a corporate atmosphere or culture in which safety is understood to be and accepted as, the number one priority*' (Cullen, 1990, p.300). In the following years, many initiatives involving the regulator (Health and Safety Executive), the industry and unions (eg, Step Change in Safety website https://www.stepchangeinsafety.net) focused on developing a better safety culture throughout the industry, with resulting noticeable improvements in safety outcomes (Cross Industry Safety Leadership Forum, 1997).

The study team also **identified a number of wider practical recommendation**s as part of its engagement with stakeholders that extend beyond the evidence collected in this review. These look at how organisational culture in the NHS can be supported more broadly through policy, resources, planning and practice:

Addressing the health and wellbeing of staff will be difficult without addressing workforce shortages within the Service. Work pressure remains a significant issue. Meeting this challenge requires **a realistic and feasible workforce plan going forward with associated levels of investment**. Such a long-term plan is currently absent.

Poor health and wellbeing in the NHS existed before the current pandemic and its aftermath. This will require a rethink in how the Service is managed and regulated. The findings of our review suggest that improving the health and wellbeing of healthcare workers is associated with a supportive culture driven by the leadership and managers in an organisation. Driving such a shift will require a change in accountability and incentives in the Service. M**anaging staff health and wellbeing of staff should be put at the core of NHS operational plans and governance, NHS strategies and the regulatory inspections by the Care Quality Commission**. The introduction of Wellbeing Guardians at board level in the NHS is a positive step forward. **Given the unique structure and size of the NHS, there is a danger that because responsibility to make the necessary changes falls on different organisations operating at national, area and employer levels, not enough will be done to effect significant change. The issue of governance needs to be addressed up front**.

The report shows the business case for substantial investment in staff health and wellbeing. The evidence suggests that health and wellbeing programmes can yield a substantial positive return on investment. And while some of these returns will accrue in the longer-run, there are likely to be more immediate gains in the retention of staff and, importantly, their expertise and experience. **Providing sustained dedicated resources for investing in the health and wellbeing of NHS staff is important. These should include managerial as well as financial resources, but also dedicated staff time to effect lasting change. Trusts must also be confident that these resources are in place for five years at a time.** We mentioned some guiding principles of such investments in an earlier section that were identified in the review. Compared with overall spending in the NHS, these amounts will be relatively modest. However, it is important that these are dedicated budgets that are comparable to the investments made by other large employers in different sectors. In the context of significant financial constraints, it is important that this is understood as investment rather than expenditure. The current focus on improving occupational health provision in the NHS is an example of such an investment. **Being able to employ more staff with the money saved will also reduce the burden of mental health problems.**

There is no shortage of 'good' practice, frameworks, pilots and toolkits that aim to improve the health and wellbeing of staff in the NHS. These resources have at times resulted in positive impacts. This review sets out the evidence base for changes in management practices and processes. One conclusion is that more evidence on what works in the NHS is required. There appears to be better evidence from other workplaces. In the absence of such evidence, **more sharing could take place between peer networks on experiential knowledge on what works in health settings** and how limited resources could be most effectively spent. Such networks could also be supported by evaluation resources (including measuring the cost and benefits of interventions) and support to create a better evidence base.

Without good information and surveillance of the state of staff mental health and wellbeing in healthcare organisations, it will be extremely difficult to drive progress. During the Covid-19 pandemic a number of standardised tools were successfully deployed at scale to track the mental health of elements of NHS workforce longitudinally. Other organisations – notably the British military – conduct longitudinal monitoring of their personnel, through an agency funded by, but independent of, the military itself. [27] In this way the external agency is able to provide meaningful data that inform welfare strategies and at the same time act as an honest broker in the monitoring task. If staff mental health and wellbeing are to become core to the culture of the NHS then an improved means of measurement and evaluation are required. Beyond the existing NHS Staff Survey there is a need for a shorter, more frequent and operationally focused tool to monitor the wellbeing and mental health of the workforce on a regular basis. The resultant data can be used by local clinical leadership, at shopfloor/operational level, to monitor the mental health of their own teams, shape local wellbeing strategies and policies and gauge the effectiveness of local interventions. These surveys can thus be used to 'test and adjust' approaches to supporting staff mental health which would have consequential beneficial impacts on the ability of teams to deliver high quality care.

[27] The UK military employs standardised mental health survey tools in its Operational Mental Health Needs Evaluation (OMHNE) survey approach https://www.kcl.ac.uk/kcmhr/research/admmh/OMHNE. Importantly this surveillance approach is funded by the military, but delivered by an independent, external agency - in this case the King's Centre for Military Health Research (KCMHR) at Kings College London - to preserve transparency and objectivity in feedback and reporting. Within the military, the OMHNE survey methodology has been well used and is a core part of the military's requirement to support the mental health of their personnel.

NHS employers and its senior managers and non-executives **have a responsibility to monitor staff wellbeing in order to receive better information on the challenges in their locality or organisation in order to address the specific health and wellbeing issues they face**. These data should cover multiple dimensions of wellbeing and incorporate mental health, engagement and different aspects of wellbeing (eg financial wellbeing) over time. The current initiative in NHSE/I around 'good hospitals' seems promising. Some challenges remain how to reach primary care and smaller NHS employers.

The NHS is emerging from a two-year period of responding to a global health crisis. It does so against the background of a decade which saw a widening in the gap between demand for healthcare and the supply of human resource to provide it. The Service has faced significant staff health and wellbeing challenges over time as documented in previous reviews and the pandemic has undoubtedly exacerbated these. To meet the formidable operational challenges that face the NHS in the future it must address the problem of poor health and wellbeing urgently and at scale. The evidence presented in this report suggests that a successful strategy to protect the mental health and wellbeing of the NHS workforce should improve staff retention, deliver cost savings, improve productivity and improve the quality and safety of patient care. The needs of patients are aligned with the needs of NHS staff. It is in everyone's interest that we care properly for our carers.

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APPENDICES

APPENDIX A Direct costs of absenteeism to NHS England

	All days of absence[1]	Days of absence due to mental health[2]	FTE annual salary[3]	FTE daily rate[4]	Cost of all absence[5]	Cost of all absence + 25%	Cost of absence due to mental health[6]	Cost of absence due to mental health + 25%	Share of cost of all absence	Share of cost of all absence due to mental health
All staff	19,570,137	5,701,576	£34,427	£155.08	£3,034,912,180	£3,793,640,225	£884,193,232	£1,105,241,540		
Professionally qualified clinical staff	8,855,138	2,442,647	£42,739	£192.52	£1,704,783,132	£2,130,978,914	£470,256,152	£587,820,190	56%	53%
HCHS doctors	705,274	151,329	£69,878	£314.76	£221,994,978	£277,493,723	£47,633,071	£59,541,339	7%	5%
Consultant	269,196	63,796	£99,531	£448.34	£120,690,852	£150,863,565	£28,601,997	£35,752,496	4%	3%
Associate Specialist	19,920	4,034	£90,558	£407.92	£8,125,910	£10,157,388	£1,645,640	£2,057,050	0%	0%
Specialty Doctor	68,482	12,489	£68,020	£306.40	£20,982,693	£26,228,366	£3,826,584	£4,783,230	1%	0%
Staff Grade	1,607	490	£61,642	£277.67	£446,299	£557,874	£136,001	£170,001	0%	0%
Specialty Registrar	177,098	39,687	£46,429	£209.14	£37,038,384	£46,297,980	£8,300,119	£10,375,148	1%	1%
Core Training	79,986	14,341	£41,568	£187.25	£14,977,011	£18,721,263	£2,685,281	£3,356,601	0%	0%
Foundation Doctor Year 2	33,373	5,697	£32,754	£147.54	£4,923,779	£6,154,724	£840,494	£1,050,617	0%	0%
Foundation Doctor Year 1	42,013	6,080	£28,368	£127.78	£5,368,529	£6,710,661	£776,920	£971,150	0%	0%
Hospital Practitioner / Clinical Assistant	4,202	1,105	£120,236	£541.60	£2,276,029	£2,845,037	£598,517	£748,147	0%	0%
Other and Local HCHS Doctor Grades	9,396	3,611	£93,810	£422.57	£3,970,481	£4,963,101	£1,525,957	£1,907,446	0%	0%
Nurses & health visitors	5,705,680	1,567,605	£34,938	£157.38	£897,954,324	£1,122,442,905	£246,708,176	£308,385,220	30%	28%
Midwives	394,047	131,899	£36,722	£165.41	£65,180,491	£81,475,613	£21,817,828	£27,272,285	2%	2%
Ambulance staff	348,765	84,768	£34,286	£154.44	£53,863,115	£67,328,893	£13,091,564	£16,364,455	2%	1%
Scientific, therapeutic & technical staff	1,701,371	507,045	£38,994	£175.65	£298,840,878	£373,551,098	£89,060,915	£111,326,144	10%	10%
Support to clinical staff	8,047,453	2,416,115	£21,709	£97.79	£786,952,490	£983,690,612	£236,269,506	£295,336,883	26%	27%
Support to doctors, nurses & midwives	6,249,100	1,880,240	£21,359	£96.21	£601,245,926	£751,557,408	£180,903,871	£226,129,838	20%	20%
Support to ambulance staff	595,642	145,722	£23,026	£103.72	£61,779,910	£77,224,887	£15,114,216	£18,892,770	2%	2%

Support to ST&T staff	1,202,711	390,154	£22,699	£102.25	£122,972,328	£153,715,410	£39,891,663	£49,864,579	4%	5%
NHS infrastructure support	2,638,637	833,307	£32,115	£144.66	£381,705,337	£477,131,671	£120,546,265	£150,682,831	13%	14%
Central functions	1,124,733	433,541	£29,341	£132.16	£148,649,927	£185,812,409	£57,298,721	£71,623,401	5%	6%
Hotel, property & estates	1,295,024	320,355	£20,773	£93.57	£121,180,787	£151,475,984	£29,976,997	£37,471,246	4%	3%
Senior managers	60,299	21,502	£83,671	£376.90	£22,726,411	£28,408,013	£8,103,916	£10,129,895	1%	1%
Managers	158,581	57,909	£54,587	£245.89	£38,993,164	£48,741,455	£14,239,247	£17,799,059	1%	2%
Other staff or those with unknown classification	28,909	9,507	£22,887	£103.09	£2,980,348	£3,725,435	£980,107	£1,225,134	0%	0%

Notes:

1) Full Time Equivalent (FTE) days lost due to all reasons April 20 - March 21
https://digital.nhs.uk/data-and-information/publications/statistical/nhs-sickness-absence-rates
2) Full Time Equivalent (FTE) days lost due to Anxiety/stress/depression/other psychiatric illnesses April 20-March 21
https://digital.nhs.uk/data-and-information/publications/statistical/nhs-sickness-absence-rates
3) NHS Digital, Provisional NHS Staff Earnings Estimates, Table 1 - Average Annual Earnings by Staff Group, in NHS Trusts and CCGs in England 2020/21
https://digital.nhs.uk/data-and-information/publications/statistical/nhs-staff-earnings-estimates
4) Evaluated based on a working year of 222 days, 260 days (5 days a week for 52 weeks) less 30 days annual leave and 8 days for bank holidays (https://www.nhsemployers.org/publications/tchandbook Table 6, 27 days of annual leave for new recruits, 29 days after 5 years of service and 33 days after 10 years of service, we use 30 as an average figure)
5) FTE days lost due to all reasons x FTE daily rate
6) FTE days lost due to mental health x FTE daily rate

Cost of all absence = All days of absence × (FTE average salary/222)

Cost of absence due to mental health = Days of absence due to mental health × (FTE average salary/222)

APPENDIX B Costs of presenteeism

	Lower estimate – 1.5 x costs of absenteeism[1]	Middle estimate - 2 x cost of absenteeism[2]	Upper estimate[3]	Cost of presenteeism due to mental health[4]
All staff	£4,552,368,270	£6,069,824,360	£8,340,071,572	£6,189,352,624
Professionally qualified clinical staff	£2,557,174,697	£3,409,566,263	£4,526,320,043	£3,291,793,064
HCHS doctors	£332,992,467	£443,989,956	£507,793,407	£333,431,500
Consultant	£181,036,278	£241,381,704	£292,302,832	£200,213,977
Associate Specialist	£12,188,866	£16,251,821	£17,999,749	£11,519,479
Specialty Doctor	£31,474,040	£41,965,386	£43,942,199	£26,786,090
Staff Grade	£669,449	£892,599	£1,262,305	£952,006
Specialty Registrar	£55,557,576	£74,076,768	£86,839,095	£58,100,830
Core Training	£22,465,516	£29,954,021	£31,088,694	£18,796,964
Foundation Doctor Year 2	£7,385,669	£9,847,559	£9,966,743	£5,883,458
Foundation Doctor Year 1	£8,052,793	£10,737,058	£10,030,050	£5,438,441
Hospital Practitioner / Clinical Assistant	£3,414,044	£4,552,059	£5,867,133	£4,189,621
Other and Local HCHS Doctor Grades	£5,955,721	£7,940,962	£13,126,222	£10,681,698
Nurses & health visitors	£1,346,931,486	£1,795,908,648	£2,378,203,379	£1,726,957,231
Midwives	£97,770,736	£130,360,981	£196,087,460	£152,724,797
Ambulance staff	£80,794,672	£107,726,229	£132,412,498	£91,640,947
Scientific, therapeutic & technical staff	£448,261,317	£597,681,756	£833,206,367	£623,426,404
Support to clinical staff	£1,180,428,735	£1,573,904,980	£2,204,569,528	£1,653,886,544
Support to doctors, nurses & midwives	£901,868,890	£1,202,491,853	£1,686,669,150	£1,266,327,094
Support to ambulance staff	£92,669,865	£123,559,820	£152,465,206	£105,799,512
Support to ST&T staff	£184,458,492	£245,944,656	£362,322,305	£279,241,640
NHS infrastructure support	£572,558,005	£763,410,673	£1,104,982,925	£843,823,854
Central functions	£222,974,891	£297,299,854	£492,442,251	£401,091,044
Hotel, property & estates	£181,771,180	£242,361,574	£301,042,767	£209,838,977
Senior managers	£34,089,616	£45,452,821	£71,349,906	£56,727,412
Managers	£58,489,746	£77,986,328	£124,428,645	£99,674,729
Other staff or those with unknown classification	£4,470,522	£5,960,696	£8,860,990	£6,860,749

Notes: the costs of absenteeism are taken from Table 3 (main text above), we base these on the daily salary rate and the days of absence and exclude the additional costs of pensions and national insurance contributions on the grounds that staff are working.

[1] 1.5 * days of absence (Parsonage, 2007)

[2] 2 * days of absence (Parsonage & Saini, 2017)

[3] Costs evaluated as 1 day lost due to presenteeism per day of non-mental health related absence + 7 days lost due to presenteeism per day lost due to mental health (McTernan et al., 2013, RAND Europe, 2015)

[4] Cost of presenteeism due to mental health alone 7 days lost due to presenteeism per day lost due to mental health McTernan et al., 2013, RAND Europe, 2015

APPENDIX C Potential savings based on using agency staff for six months to cover voluntary quits

	No change	**Days lost through poor mental health ↓ 10%**	**Days lost through poor mental health ↓ 25%**	**Voluntary quits ↓ 10%**	**Days lost through poor mental health and voluntary quits ↓ 10%**
Absence	£3,793,640,225	£3,683,116,071	£3,517,329,840	£3,793,640,225	£3,683,116,071
Presenteeism	£6,069,824,360	£5,892,985,713	£5,627,727,744	£6,069,824,360	£5,892,985,713
Cost of using agency staff @ average rate of £209 to cover days of absence due to mental health	£1,191,629,407	£1,072,466,466	£893,722,055	£1,191,629,407	£1,072,466,466
Cost of using agency staff @ average rate of £209 for 6 months (182 days) to cover voluntary quits	£4,078,244,170	£4,078,244,170	£4,078,244,170	£3,670,419,753	£3,670,419,753
Cost of poor wellbeing to NHS - 6 months agency cover for voluntary quits	£15,133,338,161	£14,726,812,420	£14,117,023,809	£14,725,513,744	£14,318,988,003
Savings		2.69%	6.72%	2.69%	5.38%

Note: Agency costs are evaluated @ average rate of £209. Simulations assume isolated changes in days lost through poor mental health or reductions in voluntary quits and that there are no spillover effects. In practice a reduction in absenteeism or quits would reduce stress and pressure elsewhere in the NHS and yield further beneficial effects. Calculations are based on the assumptions outlined above and exclude costs of recruiting to replace voluntary quits.

APPENDIX D References to studies included in the rapid review

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* This article provides additional data to the study by Dawson et al. (2021)

** This article provides additional data to the study by Edwardson et al. (2018)

*** This article provides additional data to the study by Russell et al. (2016)

APPENDIX E Additional characteristics of studies included in the rapid review

Item	Bartlett (2017)
Research design	Qualitative study *Uses realist methodology. Evaluation based on 'RAMESES II reporting standards' which discuss how the programme theory was developed and data analysed. Semi-structured interviews.*
Study aim	*To evaluate support team's effectiveness in general practices in terms of supporting and promoting change in the frist two years of change interventions*
Setting	Primary Care *GP practices*
Type of intervention	Other *Interventions differ for each practice (14) included in this study > key is to tailor interventions; intended for those practices that were 'struggling' or were 'vulnerable' (p.3) and also those identified by CQC inspection (p.8); perceived "suboptimal management and leadership and suboptimal clinical team skill mix and staff deployment" mainly among nurses (p.4). The aim of interventions was to "improve the quality of working life for practice staff, achieve sustainable positive change and improve care for patients in the locality" (p.2); included identification of strategies for improvement (p.8)*
Length of intervention	*intervention studied for two years*
Follow-up	> 12 months *Evaluation of the support team's effectiveness during its first 2 years (April 2014 to March 2016), evaluators interviewed the SCGP team members individually twice and as a group for the third time.*
Comparison	*mentioned practices that were struggling or had suboptimal clinical skills team mix*
Population	Primary care - clinical Primary care - clerical
Population characteristics	Medical speciality *p.3 - "A total of 72 interviews were carried out with staff from 14 practices:* *‣ 15 practice managers;* *‣ 18 GP partners who 'led' their practice's work with the team;* *‣ 6 other GP partners;* *‣ 17 nurses;* *‣ 6 receptionists;* *‣ 8 administrators;*

	‣ *2 sessional GPs"* *In the nutshell - staff from 14 rural and urban practices, 3 key senior NHS England personnel and 5 members of the support team*
Sampling/recruitment	*Practices that wished to participate came forward. No more information on recruiting the sample, but see population characteristics.*
Country	England
Funding source	Other *This work was commissioned and funded by NHS England, grant number IR00502.*
Implementer	NHS organisation *Local NHS Management team established a multidisciplinary support team of 5 members specifically employed to undertake the intervention work (the SCGP team = 'Supporting Change in General Practice') for general practice in April 2014. However the change might have or might have not involved the members of the SCGP team directly. The evaluation carried out by The Keele School of Medicine.*

Item	**Blake (2021)**
Research design	Qualitative study *Quali study; semi-structured i/ws one to one, by telephone or MS teams.*
Study aim	*This study looked at the emotional/psychological impact of the Covid-19 pandemic on the NHS staff and their job roles as well as evaluation of the delivery and the usage of intervention which comprised of rest spaces and support, provided by MH trained NHS wellbeing buddies who were trained in psychological first aid.*
Setting	Hospital *At one acute hospital trust, Covid-19 supported wellbeing centres established at 2 hospital sites in April 2020.*
Type of intervention	Changes to physical environment *Two COVID-19 supported wellbeing centres which were opened on 6 April 2020 were studied, incl their provision of =relaxing rest spaces and psychological peer to peer support for hospital employees during the Covid-19 by NHS staff volunteers called 'WB budies" who were psychological FAiders. The rest spaces used for "quiet time out and social conversation" (p.3)*
Length of intervention	*data collected during a 6-weeks period 2020*
Follow-up	< 3 months *no follow up but expressed views of uncertainty related to whether the continuation of services were in place post-Covid.*
Comparison	*Wellbeing services prior to pandemic not utilized comprehensively. "Although participants were positive about workplace health promotion, few of the staff interviewed were regular users of the existing staff wellbeing services,which were referred to with language such as 'nice to have' or 'perhaps most appropriate for*

	office staff' (ID110)." *Covid-19 as external shock*
Population	
	Secondary care - clinical *Secondary care – clinical: hospital employees from an NHS acute hospital trust with an access to the wellbeing centres - incl paid employees who had visited the wellbeing centres, as well as bank staff and contracted hospital volunteers who were working on either of the two study sites during the pandemic. p.3* Secondary care - clerical *Secondary care – clerical - Operational staff were NHS employees who had been involved in operationalising the wellbeing centres; these included staff who managed the centres and their facilities (eg, opening hours, health and safety guidance, refreshment availability, buddy shift rotas), and wellbeing buddies who delivered peer-to-peer psychological first aid. Operational staff sometimes had dual roles, since a number of operational staff had also completed PFA training and undertaken a minimum of one 4-h shift to work as a buddy in a wellbeing centre." p.3*
Population characteristics	
	Ethnicity *1 participant identified as being from BAME* Sex (% female) *20 F and 4 M employees* Medical speciality *12 clinical members of staff (eg nurse, health care assistant) and 12 non-clinical (eg volunteers, admin, maintenance)*
Sampling/recruitment	
	Volunteers recruited via promotional material. Once theoretical saturation was achieved, interviewing process stopped. p.4"Written consent was received from 24 participants who comprised the final sample"
Country	
	England
Funding source	
	Other *The intervention was financially supported by Nottingham University Hospitals NHS Trust and Nottingham Hospitals Charity.*
Implementer	
	NHS organisation *NHS opening two wellbeing centres on 6 April 2020*

Item	**Brook (2021)**
Research design	
	Process evaluation *Pre-post test interviews*
Setting	
	Hospital
Type of intervention	
	Rota changes *Flexible rostering - choice of when to do student placement*
Length of intervention	
	Implemented over 12 weeks
Follow-up	
	< 3 months

Population	Secondary care - clinical *Student nurses*
Sampling/recruitment	*Student nurses, n = 14 post-intervention*
Country	England
Funding source	Other *Barts Health NHS Trust*
Implementer	NHS organisation *The Trust*

Item	**Dawson (2021)**
Research design	Non-controlled *Pre-test post-test only* Qualitative study Process evaluation
Study aim	*Evaluate Schwartz Rounds, mixed methods approach*
Setting	Hospital Community
Type of intervention	Communities of practice/action learning sets or similar *Schwartz Rounds*
Length of intervention	*Unknown - up to 8 months if regular attender at Schwartz Rounds*
Follow-up	< 3 months *Up to 8 months from baseline, but could be much lower if Schwartz Round attended just before follow-up* 3-6 months *Up to 8 months from baseline, but could be much lower if Schwartz Round attended just before follow-up* 7-12 months *Up to 8 months from baseline, but could be much lower if Schwartz Round attended just before follow-up*
Comparison	*People who had attended Schwartz Rounds less frequently*
Population	Secondary care - clinical Secondary care - clerical
Population characteristics	Average age *Modal age - 51-65 (34%)* Sex (% female) *81%* Medical speciality *Hospital wide*

Sampling/recruitment	*Volunteers from hospitals, recruited by research team. Sample size varies across the different sources and methods. 500 were included at follow-up in survey element, of which 51 formed a treatment group of regular attenders. 177 participants formed the qualitative interview element, plus observations of 42 rounds*
Country	UK
Funding source	Other *NIHR*

Item	**Edwardson (2018)**
Research design	Experimental Economic analysis
Setting	Hospital *Three hospitals*
Type of intervention	Changes to physical environment *Adjustable desks with education to promote mobility at work*
Follow-up	3-6 months *3 and 6 months* 7-12 months
Comparison	*No intervention (passive control)*
Randomisation	Cluster *19 clusters (offices) in treatment and 18 in control*
Population	Secondary care - clinical *Unknown proportion of clerical/clinical - suspect mainly clerical as requirement to be office based and mainly working at a desk* Secondary care - clerical *Unknown proportion of clerical/clinical - suspect mainly clerical as requirement to be office based and mainly working at a desk*
Population characteristics	Average age *41* Ethnicity *78% white European* Sex (% female) *79% F*
Sampling/recruitment	*Minimum n at follow-up - 62 participants in treatment and 46 in control. Attrition not too bad - 82% and 67% responded from treatment and control at follow-up*
Country	England *Leicestershire*

Funding source	Other *Department of Health Policy Research Programme (project No PR-R5-0213-25004)*
Implementer	Research team

Item	**Hill (2010)**
Research design	Quasi-experimental *Pre-test/post-test only*
Setting	Hospital
Type of intervention	Job (re)design *Team based training on risk assessment and action planning* Team (re)design *Team based training on risk assessment and action planning*
Length of intervention	*Two-day workshop*
Follow-up	< 3 months
Comparison	*Pre-test/post-test only*
Population	Secondary care - clinical *Alcohol dependency ward*
Population characteristics	Average age *36* Sex (% female) *73 F*
Sampling/recruitment	*n=19*
Country	England
Implementer	Research team *Not stated explicitly, but appears to be the team*

Item	**Hughes (2021)**
Research design	Qualitative study *Secondary analysis of an evaluation (this was part of a wider service evaluation of the changes to the delivery of care), use of semi-structured interviews.*
Study aim	*Considering the impact of the changes in working practices during pandemic on nurses and specifically focuses on the provision of online support/ virtual care while having the ability to work from home. The study also wanted to identify elements that could be implemented after the pandemic.*

Setting	Hospital *Single university hospital between May and July 2020*
Type of intervention	Flexible working *Flexibility of working from home and virtually during the pandemic. FW felt as desirable in the future but there is need for the adequate policies provided and risk assessments to provide care*
Length of intervention	*3 months*
Follow-up	< 3 months *The data was collected between May and July 2020.*
Comparison	*Covid-19 as external shock*
Population	Secondary care - clinical *Secondary clinical staff - nurses and nurse managers*
Population characteristics	Medical speciality *48 operational leaders and nurses: 17 opp leads, nurses at different levels of seniority 31, 15 nurse managers, 14 nurse specialists and 2 clinical research nurses*
Sampling/recruitment	*An initial purposive sample of hospital-wide operational leads recruited from the targeted invitation by a senior nurse and a convenience sample was fulfilled through the Trusts's group email list.*
Country	England
Funding source	Other *"This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors. The CNMAR is funded through UCLH Charity," (p.498)*
Implementer	NHS organisation *NHS implemented virtual service provision and home working as a result of Covid-19: "However, it was the rapid onset of COVID-19-specific restrictions that became the main driver for immediate adoption of virtual care in the UK. " (p.499)*

Item	**James (2013)**
Research design	Quasi-experimental *Pre-post only, quants n = 16 at follow-up* Process evaluation *Qual - four focus groups - n=4, n = 6, n = 17, n = 4 - technicians and pharmacists*
Study aim	*Evaluate automated dispensing systems in hospital pharmacy*
Setting	Hospital
Type of intervention	Job (re)design *Automated dispensing system - system for automating the storage of medication, stock selection and product labelling, automation done by robot (it looks like a big box or drinks*

	machine from which the drugs get delivered) Changes to physical environment *Automated dispensing system - system for automating the storage of medication, stock selection and product labelling, automation done by robot (it looks like a big box or drinks machine from which the drugs get delivered)*
Length of intervention	*Permanent introduction of new equipment*
Comparison	*Quants, up to 12 months after intervention (unclear in paper) Quals, up to 15 months after intervention (unclear in paper)*
Population	Secondary care - clinical *Pharmacists and pharmacy technicians (n=32 at follow-up for quants), n = 31 for qual*
Population characteristics	Average age *33* Sex (% female) *89 F* Medical speciality *Pharmacy*
Country	Wales
Funding source	Other *Welsh Assembly Government, Pharmacy Practice Development Scheme and the Pharmacy Practice Research Trust Galen award, UK*
Implementer	NHS organisation

Item	**Knight (2017)**
Research design	Quasi-experimental
Study aim	*To evaluate a participatory job redesign intervention*
Setting	Hospital
Type of intervention	Job (re)design *Over 12 months, 5 workshops and communities of practice for staff to identify ways in which working environments on wards could be improved* Team (re)design *Over 12 months, 5 workshops and communities of practice for staff to identify ways in which working environments on wards could be improved* Communities of practice/action learning sets or similar *Over 12 months, 5 workshops and communities of practice for staff to identify ways in which working environments on wards could be improved*
Length of intervention	*12 months*
Follow-up	< 3 months
Comparison	*Passive control (work as normal)*

Population	Secondary care - clinical
Population characteristics	Average age *38* Sex (% female) *88% F* Medical speciality *Acute care wards*
Sampling/recruitment	*Recruited from wards. 83 responded at t2 (over 50% attrition)*
Country	UK
Funding source	UKRI *Economic, Social, and Research Council (ESRC): [Grant Number X/007165-14-3]* Other *Burdett Trust for Nursing: [Grant Number 387]*
Implementer	Research team NHS organisation *Nurses with experience in participatory methods*

Item	**Manley (2019)**
Research design	Process evaluation *It combines the realist evaluation and practice development methodology and builds on the evaluation for the SQUIRE project (the Safety culture Quality Improvement Realist Evaluation) which used these.*
Study aim	*Pays attention to culture at microsystem level, that is, "where care is experienced and provided" (p.1) and aims to develop a theory on how to notice, understand and develop it further in an organisational setting. The research team set out to explore "the impact of the PSC [Patient Safety Collaborative] initiative on patient safety culture, quality improvement capability and leadership, and what works for whom in this context and why with regards to the safety culture, leadership, quality improvement capability and transferable learning across contexts (p.4)*
Setting	Hospital *4 acute NHS hospital trusts*
Type of intervention	Leadership methods *One of the interventions that this research focused as important to the safety culture was good quality clinical leadership, which involved person-centred values and safety values, involving respectful relationships, active listening, patient and attentive to the service-user expertise (eg p.10), the quality leadership was as well labelled as transformational (p.11). Active listening meant that staff felt confident to challenge professional boundaries, ask questions and check with each other without feeling hierarchical boundary. Strategies that impacted on staff and patients' wellbeing were summarised as: "respectful interprofessional relationships formed through shared team values; clarity of purpose, clear communication, and the ability to act on feedback for improvement, as well as listening to and valuing the contributions of team members to the development of collaborative holistic action plans for patients and their families" (p.11). Therefore the person centred relationships had to be experienced by both staff and patients so that a safety culture was created (p.16). Aside from good quality leadership, there was also a mention of facilitators to be present, to*

	support leaders and the frontline staff. These facilitators are also described as transformational leaders (p.14). Communities of practice/action learning sets or similar *The safety culture was also being embedded through encouraging shared learning.* Other *This study draws "on findings from a project that set out to embed a safety culture and grow quality improvement and leadership capability through a regional patient safety initiative in frontline teams" (p.1)> the previous project that this study builds on was a SCQUIRE project (The Safety Culture, Quality Improvement, Realist Evaluation) and was aimed at evaluating three interventions under the name of a PSC initiative (Patient Safety Collaborative) (p.4). Findings from this research show 4 different theories to support what works, why and for whom in respect of culture change at the microsystems level in the following categories: 1/ frontline teams developing safety cultures; 2/facilitators who are trying to embed the safety culture, quality improvement and leadership; 3/ organisations supporting frontline teams; 4/ the patient safety collaborative initiative.*
Length of intervention	*not mentioned*
Comparison	*For example, see p.7, there was pre-and post-cognitive mapping and self-assessment. This is the only place where they talk about pre-data.*
Population	Secondary care - clinical
Population characteristics	Medical speciality *10 Frontline teams, incl 2 accident and emergency departments; a clinical decision unit; ambulatory care; 2 maternity areas; wards specialising in and designated as providing support for people living with respiratory and renal conditions or frailty" (p.4).*
Sampling/recruitment	*not detailed*
Country	England
Funding source	Other *The Academic Health Sciences Network, Kent Surrey and Sussex for funding the Safety Culture, Quality Improvement Realist Evaluation Project, a Patient Safety Collaborative Initiative.*
Implementer	Research team *researchers and the health team from NHS* NHS organisation

Item	**Russell (2016)**
Research design	Experimental Qualitative study Process evaluation
Study aim	*Evaluate an e-learning package to train managers to change the working environment of those they manage, with process evaluation in one paper*
Setting	Other *Described simply as a mental health trust spread over a large geographical area - so probably community but not specified*

Type of intervention	Leadership methods *e-learning intervention for managers to improve workers' job design and relationships at work* Job (re)design *e-learning intervention for managers to improve workers' job design and relationships at work* Team (re)design *e-learning intervention for managers to improve workers' job design and relationships at work*
Length of intervention	*e-learning delivered once or twice a week over three months - modules take 10-30 minutes to complete, plus option of attending two workshops*
Follow-up	3-6 months *3 months*
Randomisation	Cluster *Only four clusters, with one allocated to the control condition*
Population	Secondary care - clinical Secondary care - clerical
Population characteristics	Average age *Not specified - age bands presented - modal age band was d by over 50 followed by 40-49* Sex (% female) *76% F* Medical speciality *Mental health*
Sampling/recruitment	*Appears to be through organisational database and contacts. Minimum N for statistical analyses at follow-up is 225 in intervention and 59 in control*
Country	UK *Country not specified in paper, but took place in one trust*
Funding source	Other *National Institute for Health Research Public Health Research Programme (project number 10/3007/06)*
Implementer	External consultant(s)

Item	**Wallbank (2011)**
Research design	Non-controlled *A pre-intervention questionnaire consisting of PROQOL - The Professional Quality of Life Scale measuring compassion satisfaction, burnout and compassion fatigue (p.33) + measuring stress through Impact of Even Scale (IES).*
Study aim	*This paper provides evidence of the effectiveness of a model of clinical supervision that reduced burnout and stress for health visitor and school nurse Leaders*

Setting	Primary Care *health visitors and school nurses*
Type of intervention	Leadership methods *A model of clinical supervision which is educational (development and achievement of potential), administrative (considering adherence to quality standards, policies and practices) and supportive (close working collegial relations), which is similar to normative (adherence to professional and ethical standards), formative (knowledge and skills) and restorative (improving capacity to cope) supervision identified by Proctor, 1986 (p.32). In this study 6 sessions of clinical supervision were delivered to 22 participants (a total of 128 sessions) by an experienced "qualified clinical psychologist", described as able to be "solution-focused" (p.32), but the participants were also receiving a half-day training to be supervisors themselves (p.33). The supervisory sessions not only allowed to alleviate anxiety, but also allowed conversations about the managerial competency of the professionals themselves (p.34). The model used here focused on "the restorative approach to supervision that remains solution focused" (p.35)*
Length of intervention	*Between April and October 2010*
Comparison	*Prior to commencing supervisory sessions, the participants were asked to complete a baseline questionnaire, which was then completed after the supervisory sessions and at the end of leadership training programme (p.33).*
Population	Primary care - clinical
Population characteristics	Medical speciality *22 health visitors and school nurse leaders who had safeguarding leadership responsibility*
Sampling/recruitment	*not mentioned*
Country	England *England - West Midlands was the participants' background*
Funding source	Other *Comissioned by NHS West Midlands*
Implementer	NHS organisation *NHS : "A clinical supervision project was commissioned by NHS West Midlands as part of a strategy to give equal precedence to upskilling and supporting current health visitors and school nurses, along with increasing workforce numbers to meet the government's commitment to health visiting (HM Government, 2010)" (p.31)*

APPENDIX F Quality appraisal of the studies included in the rapid review

Study ID	Evidence Claim	Certainty of the claim	Threats	Strengths supporting the claim	Overall trustworthiness of the claim	Overall relevance of the claim to this review
Bartlett (2017)	*The study is asking about the +/- perceptions and experiences of the practice staff with regards to the change interventions implemented.*	*Reported staff perceptions are from a variety of well represented groups across the hierarchy - reporting on both negative and positive.*	*Two of the evaluators work as GPs in the medical community in which the team works > bias possibility, however, reflexivity heightened. Also 2 years perceived as a short timescale by evaluators (p.10). Length of interviews and discussions with staff not discussed. Those who were engaged in research are likely to be highly motivated practices to change (p.11).*	*Purposive sampling to include representatives from relevant professional groups and stratified sampling for practice staff. Data collection is described. Semi-structured IWs, transcribed, recorded. Data was analyzed thematically by 2 researchers independently followed by iterations and refinement. Five SCGP team members were interviewed 3x, three key people from the local NHS team interviewed, the 72 interviews with practice staff. Realist methodology recognised as appropriate for the evaluation of complex interventions. Scoping stage (the SCGP team collating data), an action planning stage by discussing data with practice staff ("an action plan was constructed and owned by the practice staff"/ some action plan was followed, other was more 'evolutionary and more fluidly used or not used at all' (p.4)), the implementation phase. Considered reliability of different indicators and methodologies such as quasi-experimental quantitative methodology. Reflected on strengths and limitations. Data analysis described.*	Medium	High

Blake (2021)	*This study is focusing on +/- views on WB support centres, the impact of Covid -19.*	*Reporting on staff and service provider views towards supported WB centres and WB buddies (p.2). The questioning exploring the emotional impact of the pandemic.*	*24 participants in 2 hospitals interviewed at one time only. "participants recruited during and shortly after the first surge of COVID-19 in the UK" (p.22); "B.W., S.K., E.C. and J.C. are employed by the participating hospital trust but were not involved in data analysis, or interpretation of findings. E.C. was involved in training the wellbeing buddies. No other conflicts of interest were declared." (p.24)*	*The study utilizes the consolidated criteria for reporting qualitative research guidelines. The study was caried out independently from the implementation team. Interview questions piloted, theoretical saturation considered. Thematic analysis and independent coding.*	High	High
Brook (2021)	*Flexible rostering improves wellbeing*	*Low*	*Small sample size, short-follow-up, student nature of sample - might be easier to implement flexible rostering for placement students compared to full-time workers*	*Qualitative analysis appears to be rigorous*	Low	Medium
Dawson (2021)	*Schwartz Rounds can increase wellbeing through a variety of mechanisms linked to sharing and support*	*Uncertain - see threats, quantitative and qualitative analyses come to different conclusions*	*Self-selection bias - participants were not allocated into control/treatment groups and measure of intervention was passive (reports of how many Schwartz Rounds attended). Any qual effects are marginal, and qual analyses/suggestions for moderators and implementation factors need further verification as they came after the quants analysis and were not built in as a priori explanators. Quants and*	*Extensive qualitative evidence*	Medium	High

			qual results/conclusions diverge			
Edwardson (2018)	*Height adjustable tables plus education improve a range of markers of physical activity, wellbeing and performance*	*Although not all indicators showed improvement, some did and it did lead to savings - however the extent to which the desks or the educational component can be attributed as the causal factor is unknown*	*Multicomponent intervention without disentangling the different elements in a three- or four-armed trial*	*Good design, clustering accounted for in analyses, sample size may compromise some power. Primary indicators (sitting) also changed, suggested the intervention worked as intended*	High	High
Hill (2010)	*Risk assessment workshops and action planning reduce burnout*	*Low*	*Small sample size, weak design, no mediators to test theoretical mechanisms, small range of outcomes assessed*	*Very few*	Low	High
Hughes (2021)	*The study included a description of the changes in service delivery by opperational leads and their perceptions of what worked well and what did not (p.500), followed by interviews with nurses reflecting on their experiences and what could have been improved and what not (p.500). Providing a balanced view with recommendations that remote working works at best when it is optional (p.507).*	*not mentioned*	*Single hospital setting; short time frame of interviews - between May and July 2020. "This was secondary analysis of a wider evaluation; therefore virtual care and remote working were not the sole focus of the interviews." (p.507). Only nursing staff interviewed so views of other professional groups not represented (p.507). Patients experience reported through nurses' views only.*	*Semi-structured interviews conducted through video conference software, 40 -60 mins long, transcribed, using Framework Analysis (Ritchie and Spence, 1994) for the evaluation to enable multiple researchers to check the interpretation. The criteria by Beck (1993) were used to establish methodological rigour. Interviewed operational leads and the secondary analysis included a purposive sample of nurses.*	Medium	High
James (2013)	*The installation of the new system and resultant redesign of the*	*This will be low, sample size is small,*	*Low sample size for quants, high attrition rate, no control*		Low	High

	dispensary had improved working conditions, dispensing efficiency and management of workload, also reduced dispensing errors	*there is no control group*	*group, some participants in the qual phase raised questions about the honesty of the survey responses. Statistically, no adjustment for multiple comparisons and pre/post responses were not strictly matched. Qual and quants not completely convergent, quals indicate divergent responses from study participants*			
Knight (2017)	*Participatory intervention had no effects*	*Uncertain, high levels of drop-out and attrition, small sample, ceiling effects for relatedness in particular (mean . 4 on a 5 point scale in the treatment group), but the mean for work engagement was also high (> 5 on 7 point scale)*	*High levels of drop-out and attrition, small sample, ceiling effects for relatedness in particular (mean . 4 on a 5 point scale in the treatment group), but the mean for work engagement was also high (> 5 on 7 point scale)*	*Did have a control group*	Medium	High
Manley (2019)	*The person-centred, safe and effective workplace culture is claimed to be a proxy (p.18) for achieving health, quality and wellbeing outcomes by Manley et al., 2011, which this article helps to elaborate on. The findings indicate that safety culture requires/ or the attributes of good safety culture are "person-centred"/ respect in all relationships and active listening and collaboration that is modelled by clinical leaders, rather than just*	*The study also looks at what does not work, e.g in frontline teams. For example. When quality clinical leadership is not present, the study claims an adverse effect on staff and patient wellbeing, including the safety culture (p.9)*	*We know that 10 different teams were spoken to but we do not know methods of obtaining the data in much detail, they are rather briefly outlined in T1 on p.6. Limitations acknowledged - the person centred valued are also considered important by researchers - "no knowledge is value free (Guba and Lincoln, 1994). Perspectives are generic as no context between*	*24 CMO relationships resulting in 4 emerging programme theories describing what worked, why and for whom. The realist methodology was combined with the practice development methodology, which meant that also how the evaluation team worked with 4 acute trusts had been investigated (stakeholder evaluation). Methodologically, this study used a range of methods in respect of each evaluation question, including qualitative and*	Medium	High

	espoused values (p.1, p.8) + holistic safety including staff and patients (p.11) + there is a need to focus on "appreciative active learning, person-centerdness in everyday relationships and an integrated approach to learning, development and improvement embedded at both micro and meso levels" (p.1) in culture. The study also provides practical recommendations (p.2) on safety and person-centred values, also stressing quality clinical leadership as essential, corporate support and training of facilitators, role modelling of the org values from the top and supporting a bottom up participative approach to change and innovation. The claims are evidenced through a range of qualitative (eg ethnographic observations) and quantitative methods (eg survey), for example, the researchers observed "safety huddles across different teams" and also took into account staff feedback (p.10)		*10 different teams was investigated in detail. Acknowledge the issue of generalisations to other contextual settings (p.19).*	*quantitative methods (p.6), triangulation of data across literature and sites, as well as some involvement of expert international advisory panel on two occasions. Thematic analysis and hypothesis testing for the CMO and data for each of the 10 front line teams analysed independently.*		
Russell (2016)	*There is no claim the intervention worked*	*n/a*	*Small sample size, lack of engagement with intervention, weak intervention, follow up of three months perhaps too short to detect changes to working practices.*		Medium	High
Wallbank (2011)	*While participants were able to attend 6 sessions of the supervision, because of their high demanding*	*The authors are not voicing any doubts about their claims, but*	*There is also an issue with certainty of the claims, such as, during the supervisory*	*Reporting SD, p-values and t-scores including pre and post intervention in terms of their reduction. Scales*	Medium	High

	workload, they had to reschedule often > high requirement of flexibility on behalf of the supervisor required. The demands of the job need to be taken into account and this is why an adequate supervision is helpful. However, while managerial supervision tended to be preferred by the staff, it should not be taken in isolation and focused not only on tasks and results but also on emotional wellbeing, such as anxiety (p.34). As the supervisory sessions discussed managerial competency, this study stresses the importance of training in how to deliver supervision.	*there are weaknesses in certainty of the claim - see threats. However, the recommendations do point out that emotional processing in terms of restorative supervision are more effective than mere managerial supervision.*	*sessions the practitioners were allowed to talk about their own managerial competence anxieties, and this was "likely to reduce the burden of stress on the professional" (p.34). However, without qualitative methodology, the likely effect is probable but not evidenced sufficiently.*	*used to measure stress and burnout as well as supervisory relations. Focusing on the type of supervisory model, which is restorative, delivered by a clinical psychologist.*		

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