

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

A rapid evidence review  
and economic analysis

## REVIEW METHODS

This document provides additional information on the methods used where there was insufficient space to describe these in the report.

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## Methods for Part 1: Mental health and wellbeing in the NHS

To identify published studies we employed a truncated search strategy based initially on identifying relevant existing reviews in the [IPPO Living Map](#)<sup>3</sup> (search date 22 February 2022). The 86 reviews categorized as relevant to the mental health or wellbeing of healthcare professionals were scanned to identify those published most recently (therefore with the most up-to-date data). Three had reviewed UK data: Alimoradi et al (2021), de Sousa et al (2021) and Johns et al (2021). Additional searching identified a fourth review, Jefferson et al (2021). From these four reviews, studies containing UK-sourced data on healthcare professionals were identified and their reference lists scanned.

In all, only four relevant studies were found, all of which had collected data in the earlier part of the pandemic in the UK between April and September 2020. Data have been collected from different specialties.

## Methods for Part 5: Rapid evidence review of organisational and management practices

### Search strategy

We aimed to identify all relevant literature by searching multiple bibliographic databases covering a range of research disciplines. In addition, we checked that we had found all papers relevant to each included study and double-checked the reference lists of relevant systematic reviews identified in the original searches.

### Inclusion and exclusion criteria

We aimed to find articles published in English related to experiments 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

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<sup>3</sup> Updated monthly with newly published systematic reviews relating to the COVID-19 pandemic (Shemilt I, Gough D, Thomas J, Stansfield C, Bangpan M, Brunton J, Dickson K, Graziosi S, Hull P, Kneale D, Muraki S, Ramadani F, Vigurs C (2021) Living map of systematic reviews of social sciences research evidence on COVID-19. London: EPPI Centre, UCL Social Research Institute, University College London.)

Total Factor Productivity (TFP), Quality Adjusted Life Years (QALYs), waiting times, quality of patient 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.

### Electronic database searches

CV searched electronic databases to find further articles using a search string based on:

(NHS) AND (wellbeing OR mental health) AND (intervention) AND (level of intervention).

The following databases, which collectively cover research in the fields of business, politics, economics, health and social science, were searched on 31 January 2021:

- Google Scholar
- CINAHL
- SCOPUS
- Psychinfo

Search strings are in Appendix m1.

CV uploaded the search results from the database searched into EPPI-Reviewer software (Thomas et al., 2020) and removed duplicates. In addition nine articles were uploaded manually following a citation check. Table m1 summarises the number of articles retrieved and duplicates removed.

Database/Platform	Articles identified	Duplicates removed
Google Scholar	147	1
CINAHL	694	43
SCOPUS (limits 20 yrs + UK)	1430	134
Psychinfo	1326	354
Manually uploaded articles	9	0
<b>TOTALS</b>	<b>3606</b>	<b>532</b>

Table m1 Articles identified by database

### Screening

KD, SC, JP or RW screened the title and abstract of each uploaded article (n=3074). As the number of potentially relevant articles was high (n=195), an additional inclusion criterion was introduced limiting results to papers published in 2010 or later. A total of 2965 articles were excluded in this process with 77 marked 'include on title and abstract' and 32 marked 'for full text check'. KD checked the full text of all these papers (n=77 + n= 32) excluding 90 papers leaving 19 included for data extraction. CvS 'sense-checked' these included studies. None was removed.

Appendix m2 provides a PRISMA diagram (Page et al, 2021) of the flow of studies through the review process. References to the included articles are in Appendix C of the main report.

### Data extraction and coding

KD, JP and RW extracted the characteristics and outcome data of each study into EPPI-Reviewer based on a coding scheme designed by the review team (see Appendix m3).

The coding scheme was updated iteratively to include new characteristics or outcomes as they arose during the data extraction process.

### Quality appraisal: assessing evidence claims

As part of our rapidity strategy we did not subject individual studies to quality appraisal. Although detailed tools are available for a range of research designs, these are time-consuming to complete. Instead, we focused on an assessment of the *evidence claims* being made and the extent to which these were both trustworthy and 'fit for purpose' within the context of our review.

Research studies use their findings to reach conclusions which are, in effect, evidence claims. These claims may state that something is or is not the case and may be weak or strong or even vary in certainty. Appraising the quality and relevance of studies is assessing whether the conclusions of a study – the evidence claims – are justified (Gough, 2021).

As data were extracted for each experiment, KD, JP and RW noted any concerns around the *trustworthiness* of any evidence claims made together with the relevance of any claim to the overall review. These matters were assessed based on a consideration of:

- I. The evidence claim(s) being made including their scope;
- II. The specified certainty of any claim(s);
- III. Threats undermining any claim(s);
- IV. Strengths supporting the claim (and balancing any threats).
- V. A grade was then allocated to each experiment for:
  - a. The overall assessment of trustworthiness of claim: High/ Medium / Low
  - b. The overall assessment of relevance of claim: High/ Medium / Low

The overall quality of evidence claims for each experiment can be seen in Appendix F in the main report. No studies were excluded due to poor quality.

## References

Garritty, C., Gartlehner, G., Nussbaumer-Streit, B., King, V., Hamel, C., Kamel, C., . . . Stevens, A. (2021). Cochrane Rapid Reviews Methods Group offers evidence-informed guidance to conduct rapid reviews. *Journal of Clinical Epidemiology*, 130, 13-22.

Gough, D. (2021). Appraising Evidence Claims. *Review of Research in Education*, 45(1), 1-26.

Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71 <http://www.prisma-statement.org/>

## Appendix m1 Search strings

### **CINAHL (Ebsco)**

TI (work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* ) OR AB ( work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* )

TI (organization\* OR policy OR culture OR Occupation\* OR environment OR institution\* OR level OR profession\* OR HR OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system ) OR AB ( organization\* OR policy OR culture OR Occupation\* OR environment OR institution\* OR level OR profession\* OR HR OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system )

TI ( well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance ) OR AB ( well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance )

(MM "Psychological Well-Being") OR (MM "Quality of Life")

Ti(NHS OR "national health" OR "national health service") OR ab(NHS OR "national health" OR "national health service")

### **PsychInfo (1326)**

NHS OR "national health" OR "national health service"

TI (work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* ) OR AB ( work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* )

TI (organization\* OR policy OR culture OR Occupation\* OR environment OR institution\* OR level OR profession\* OR HR OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system ) AND AB ( organization\* OR policy OR culture OR Occupation\* OR environment OR institution\* OR level OR profession\* OR HR OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system )

(MM "Psychological Well-Being") OR (MM "Quality of Life")

ti(well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance) OR ab(well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance)

TI ( longitudinal OR panel OR "case study" OR experiment\* OR quasi-experiment\* OR intervention OR evaluation OR "randomised control\*" OR "randomized control\*" OR RCT OR trial OR compar\* OR implementation ) OR AB ( longitudinal OR panel OR "case study" OR experiment\* OR quasi-experiment\* OR intervention OR evaluation OR "randomised control\*" OR "randomized control\*" OR RCT OR trial OR compar\* OR implementation )

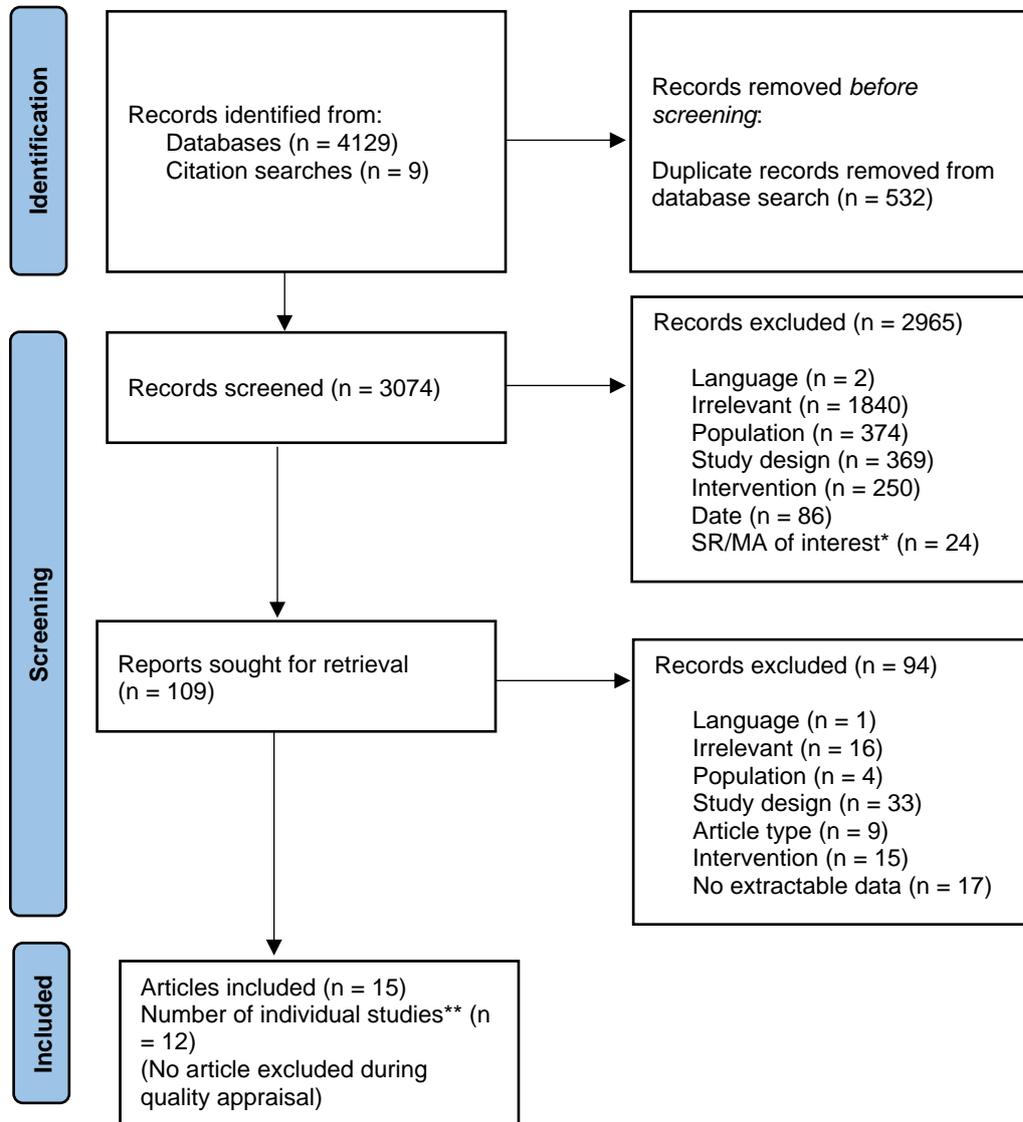
**SCOPUS (1430) ( no subject headings in SCOPUS)**

(( TITLE ( nhs OR "national health" OR "national health service" ) OR ABS ( nhs OR "national health" OR "national health service" ))) AND (( TITLE ( work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* ) OR ABS ( work OR "job quality" OR "job design" OR " job characteristic\*" OR "Job feature\*" OR "Job redesign" OR craft OR enrich\* OR enlarg\* ))) AND (( TITLE ( organization\* OR policy OR culture OR occupation\* OR environment OR institution\* OR level OR profession\* OR hr OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system ) OR ABS ( organization\* OR policy OR culture OR occupation\* OR environment OR institution\* OR level OR profession\* OR hr OR "human resources" OR climate OR strateg\* OR workplace OR team\* OR system ))) AND (( TITLE ( well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance ) OR ABS ( well-being OR wellbeing OR "well being" OR "mental health" OR wellness OR satisfac\* OR happy OR happiness OR happier OR health\* OR "quality of life" OR balance ))) AND (( TITLE ( longitudinal OR panel OR "case study" OR experiment\* OR quasi-experiment\* OR intervention OR evaluation OR "randomised control\*" OR "randomized control\*" OR rct OR trial OR compar\* OR implementation ) OR ABS ( longitudinal OR panel OR "case study" OR experiment\* OR quasi-experiment\* OR intervention OR evaluation OR "randomised control\*" OR "randomized control\*" OR rct OR trial OR compar\* OR implementation )))

**Google scholar (147) (automatically searches for synonyms)**

“National Health Service” OR “NHS” AND Organisation AND wellbeing

## Appendix m2 PRISMA Diagram



Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71 <http://www.prisma-statement.org/>

\* Although the searches did not specifically target systematic reviews (SR) or meta-analyses (MR), those retrieved and relevant to the review were noted and their reference lists checked for further citations.

\*\* More than one paper was identified for two studies.

## Appendix m3 Coding scheme

### Study Characteristics

- Funding source
  - UKRI
  - MHRA
  - Wellcome
  - Nuffield
  - Other (add to info box)
- Status of report
  - Published
  - In press
  - Unpublished
- Year
  - Pre-1990
  - 1990-1999
  - 2000-2009
  - 2010-2019
  - 2020 onwards
- Country
  - UK
  - England
  - Scotland
  - Wales
  - NI
- Setting
  - Hospital
  - Community
  - Primary Care
  - Other
  - Study Aim
- Research Design
  - Experimental
  - Quasi-experimental
  - Non-controlled
  - Qualitative study
  - Economic analysis
  - Process evaluation
- Randomisation
  - Individual
  - Cluster
- Sampling/recruitment
- Population
  - Primary care - clinical
  - Primary care - clerical
  - Secondary care - clinical

- Secondary care - clerical
- Population characteristics
  - Average age
  - Ethnicity
  - Sex (% female)
  - Medical speciality
- Type of intervention
  - Leadership methods
  - Shift pattern changes
  - Rota changes
  - New IT systems
  - Provision of staff facilities
  - Job (re)design
  - Team (re)design
  - Communities of practice/action learning sets or similar
  - Changes to employment contracts
  - Flexible working
  - Changes to physical environment
  - Other
- Length of intervention
- Follow-up
  - < 3 months
  - 3-6 months
  - 7-12 months
  - > 12 months
- Comparison
- Implementer
  - Research team
  - External consultant(s)
  - NHS organisation (add to info box)
  - Other (add to info box)
- Linked papers

#### Outcome data

- Self-reported staff wellbeing
  - Job satisfaction
  - Life satisfaction
    - Eudamonic wellbeing
  - Mental health & Wellbeing
    - Anxiety
    - Depression
    - Affective wellbeing
    - Psychological wellbeing
    - Burnout
    - Emotional exhaustion
    - Occupational stress

- Physical health
- Other wellbeing outcome
- Employee productivity
  - Absenteeism
  - Presenteeism
  - Worker engagement
  - Medical errors
  - Patient safety incidents
  - Patient complaints
  - Discretionary effort
  - Prosocial behaviour
  - Workplace conflict incidents
  - Employee productivity
  - Other performance outcome
- Organisation/Trust productivity
  - Staff retention/attrition/turnover
  - Vacancies
  - Employer attractiveness/corporate image
  - Organisational productivity (Total Factor Productivity)
  - QALYs
  - Waiting times
  - Quality of patient care/experience/safety
  - Waiting times
  - Premature mortality
  - Preventable mortality
  - (Relative) case fatality/mortality/survival rate
  - Healthcare costs/spending
  - Improved staff facilities
  - Cost savings
  - Other performance outcome

### Report type

- Journal article (peer-reviewed)
- Report
- Book chapter
- Thesis/dissertation
- Other (please add to Info)

### Mediators and moderators

- Mediators
  - Process - how does it work?
  - Unintended mechanisms
- Moderators
  - Contingencies

## Quality Appraisal

- Evidence Claim
- Certainty of the claim
- Threats
- Strengths supporting the claim
- Overall trustworthiness of the claim
  - High
  - Medium
  - Low
- Overall relevance of the claim to this review
  - High
  - Medium
  - Low