

# Assessing the Impact of Staff Sentiment in Healthcare on Patient Safety Outcomes



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## Summary

- + Understanding and addressing drivers of patient outcomes is a key priority for healthcare professionals, managers and commissioners within any healthcare system.
- + This study found no link between healthcare staff satisfaction and patient safety outcomes within the acute trust sector in the National Health Service in England.
- + However, this study found a strong, nearly linear relationship between higher levels of deprivation and increasing safety incidents, suggesting that socioeconomic factors play an important role in influencing patient safety outcomes.

## Background

In recent years, the National Health Service (NHS) in England has been under extreme pressure due to the Covid-19 pandemic and unprecedented demand.

The drop in staff satisfaction reported in the recent NHS Staff Surveys<sup>1</sup> has coincided with a decrease in public satisfaction with the NHS.<sup>2</sup>

Prior to the pandemic, research already demonstrated a link between healthcare staff morale and patient satisfaction.<sup>3,4</sup> On the other hand, the impact on patient clinical outcomes is mixed.<sup>5</sup>

## Objectives

This study aimed to delineate the impact of staff sentiment on patient safety within the NHS using publicly-available data sources. Additionally, it investigated whether NHS organisations serving more deprived areas have worse patient safety outcomes.

## Methods

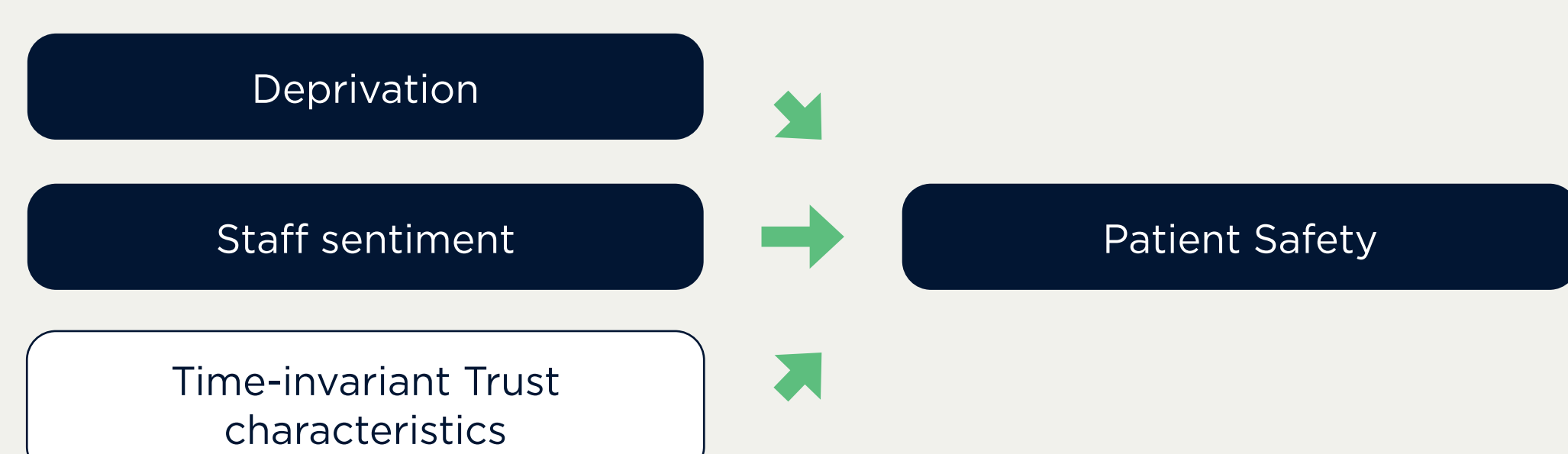
Data on staff satisfaction at the NHS trust level were taken from the 2018, 2019, and 2020 editions of the NHS Staff Survey,<sup>1</sup> one of the largest workforce surveys in the world, administered each autumn to NHS staff. Although results for more recent years are available, data from 2018-2020 were considered to ensure alignment with the reporting period for the outcome (described below).

For each NHS organisation, the survey reports the percentage of staff agreeing or strongly agreeing with the following survey question: "I will probably look for a job at a new organisation in the next 12 months." Staff intention to leave, as reported in the survey, was used as a proxy for staff sentiment. Results from acute trusts only were considered to ensure consistency in comparing staff sentiment across similar healthcare settings.

The outcome of interest was the rate of patient safety incidents reported to the National Reporting and Learning System (NRLS) by NHS provider organisations for 2018, 2019, and 2020.<sup>6</sup> All patient safety incidents were included in the analysis, encompassing both incidents that had the potential to cause harm and those that resulted in actual harm.

Deprivation data at NHS trust level for 2019 were aggregated into quintiles and used in model adjustment, assuming the following relationships between staff sentiment, deprivation, and patient safety:

Figure 1. Model diagram for the impact of staff sentiment on patient safety



A fixed-effects Poisson regression model was used to control for unmeasured characteristics assumed to be fixed over the period of analysis within NHS trusts, such as staffing levels and patient case-mix. By focusing on within-unit (NHS trust) changes, the model isolates the effect of variables that change over time and are thought to influence the outcome (Figure 1).

## Results

Between April 2018 and March 2020, staff sentiment across the acute trusts analysed (n=118) improved slightly, with the mean percentage of staff intending to leave decreasing from 20.9% in 2018 to 19.5% in 2020 (Figure 2).

Conversely, the safety incidents rate for the acute sector during this period increased from 42.1 to 48.9 incidents per 1,000 bed days (Figure 3).

Figure 2. Mean and range of percentage of staff intending to leave across 118 NHS acute trusts

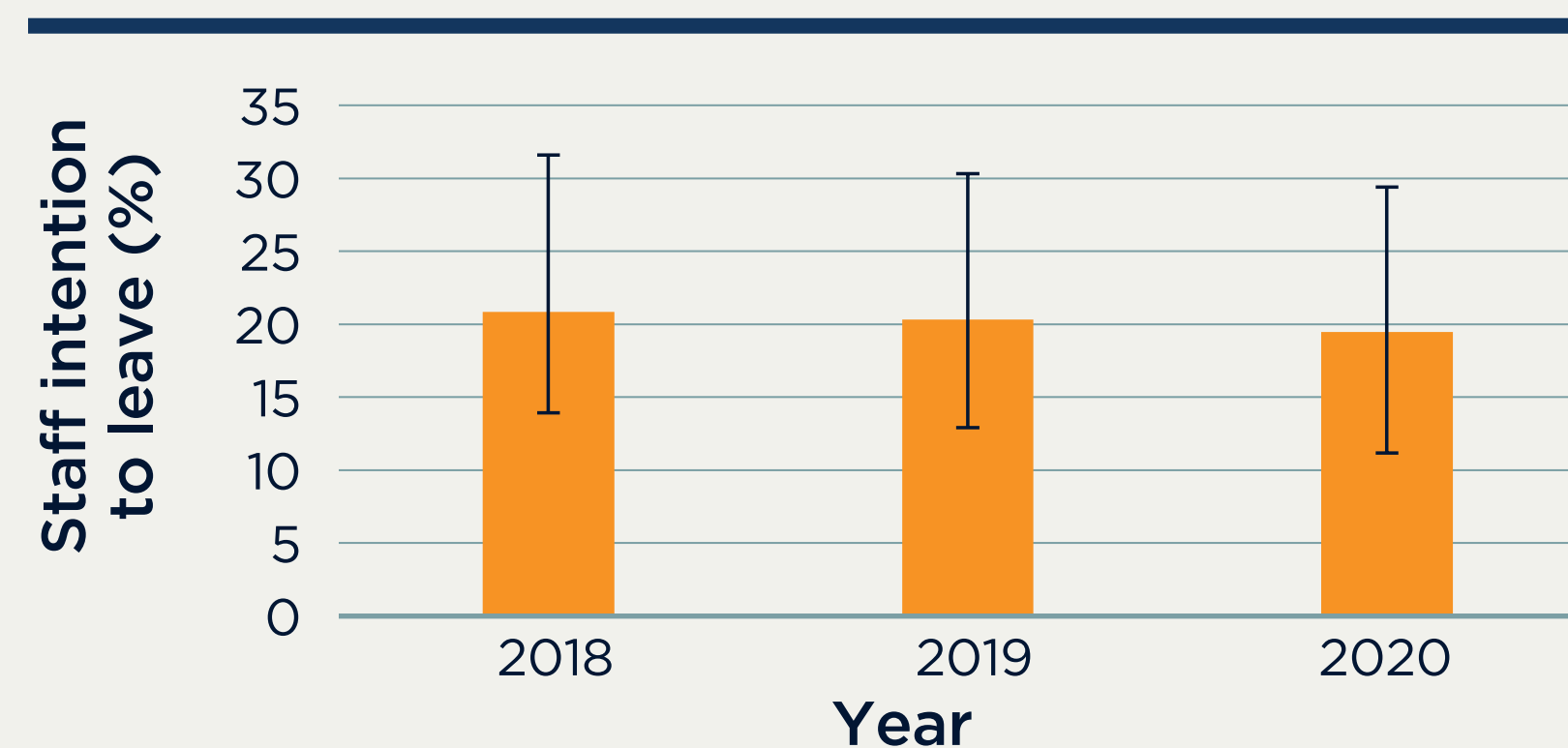
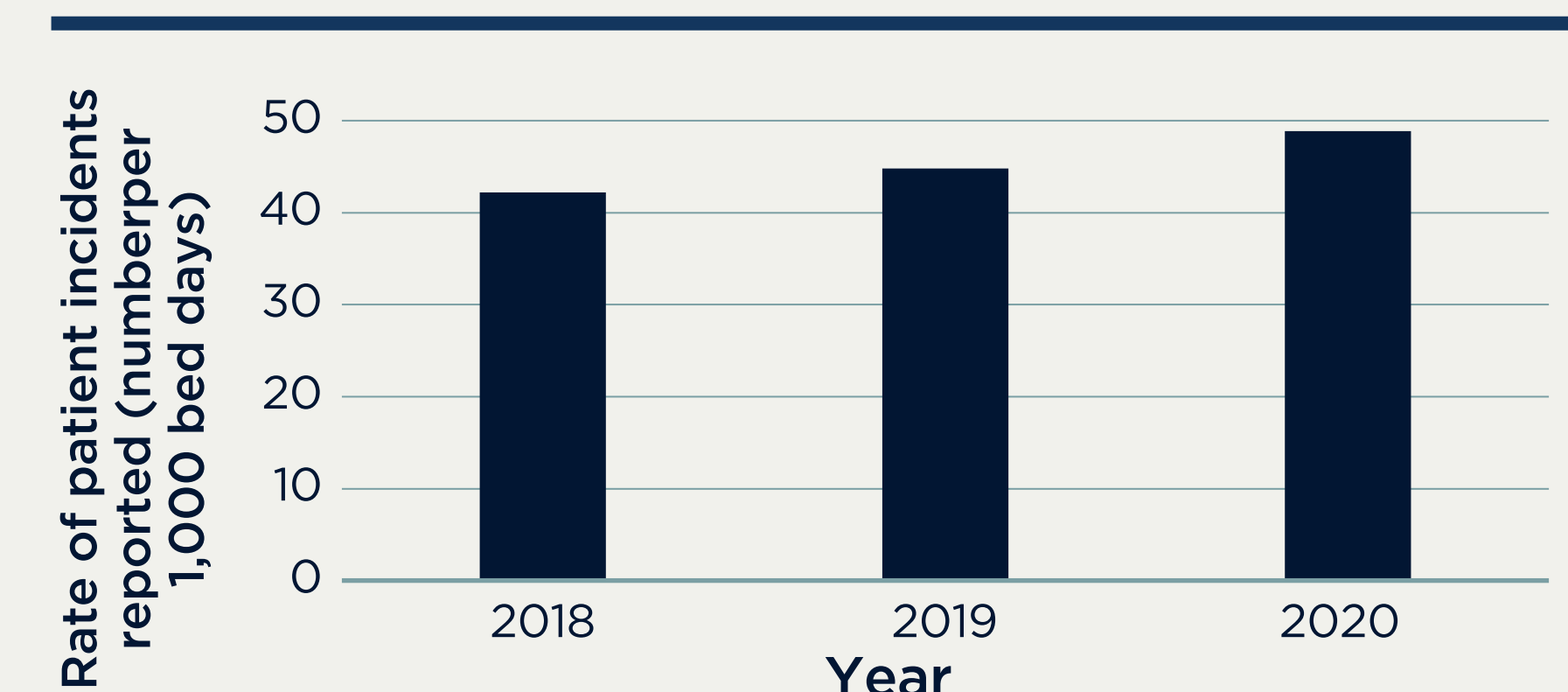


Figure 3. Total number of patient incidents reported per 1,000 bed days across 118 NHS acute trusts



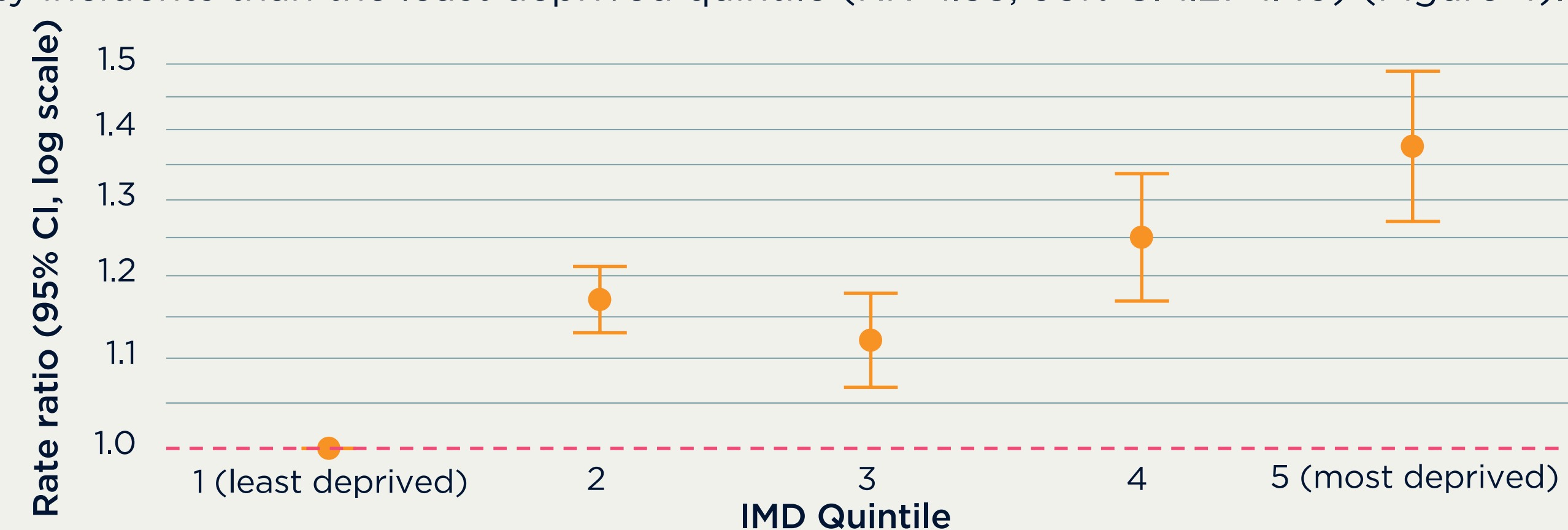
In both the univariable and multivariable models, the percentage of staff intending to leave at the trust level had no effect on the safety incidents rate (unadjusted rate ratio (RR)=1.00, 95% CI 0.99-1.01; adjusted RR=1.00, 95% CI 0.99-1.01) (Table 1).

Table 1. Rate ratios of staff intention to leave and IMD quintiles on rate of patient incidents from univariable and multivariable models

Variable	Rate ratio (95% CI) from univariable model	Rate ratio (95% CI) from multivariable model
Intention to leave (%)	1.00 (0.99-1.01)	1.00 (0.99-1.01)
<b>IMD quintile</b>		
Quintile 1 (least deprived)	N/A	1 (Reference)
Quintile 2	N/A	1.17 (1.13-1.21)
Quintile 3	N/A	1.12 (1.07-1.18)
Quintile 4	N/A	1.25 (1.17-1.34)
Quintile 5 (most deprived)	N/A	1.38 (1.27-1.49)

In the multivariable model, increasing deprivation quintile was significantly associated with increasing safety incidents in a nearly stepwise fashion (likelihood ratio test p-value<0.0001), with the most deprived quintile exhibiting a 38% higher rate of safety incidents than the least deprived quintile (RR=1.38, 95% CI 1.27-1.49) (Figure 4).

Figure 4. Rate ratios of IMD quintiles on rate of patient incidents from the multivariable model



## Conclusions

This analysis demonstrated no link between staff sentiment and patient safety before and after adjusting for potential confounding by deprivation. The lack of a statistical association may point to more honest reporting of safety incidents by trusts with better working cultures, thereby masking the impact of poor staff satisfaction on patient safety.

We found a strong, nearly linear relationship between higher levels of deprivation and increasing safety incidents, suggesting that area-level socioeconomic factors exert more influence on patient safety than staff sentiment.

These findings have important implications for healthcare policy and resource allocation. Rather than focusing exclusively on improving staff morale to enhance patient safety, interventions may be more effective if targeted at addressing socioeconomic disparities and providing additional support to healthcare facilities serving more deprived areas.

### References:

- NHS England. NHS Improvement. NHS Staff Survey [Internet]. Available from: <https://www.nhsstaffsurveys.com/>
- The Health Foundation. Public perceptions of health and social care [Internet]. [Cited 2024 Oct 4]. Available from: <https://www.health.org.uk/programmes/public-perceptions-of-health-and-social-care>
- Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. PLoS One. 2016 Jul 8;11(7):e0159015.
- Haas JS, Cook EF, Puopolo AL, Burstin HR, Cleary PD, Brennan TA. Is the Professional Satisfaction of General Internists Associated with Patient Satisfaction? J Gen Intern Med. 2000 Feb;15(2):122-8.
- Wake M, Green W. Relationship between employee engagement scores and service quality ratings: analysis of the National Health Service staff survey across 97 acute NHS trusts in England and concurrent Care Quality Commission outcomes (2012-2016). BMJ Open. 2019 Jul;9(7):e026472.
- NHS Outcomes Framework Indicators - March 2022 release [Internet]. NHS England Digital. [Cited 2024 Oct 4]. Available from: <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/march-2022>