

Assessing the Impact of Human Resources Staff Turnover
in NHS: *A Secondary Data Analysis of Workforce Retention
at University Hospitals of Derby and Burton*

By

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ABSTRACT

This study investigates the impact of human resources (HR) staff turnover within the National Health Service (NHS), focusing specifically on internationally educated nurses (IENs) employed at University Hospitals of Derby and Burton (UHDB). Using a secondary dataset comprising 11 complete observations across Royal Derby Hospital (RDH) and Queen's Hospital Burton (QHB), the analysis explores turnover rates, retention levels, and key HR experience variables including manager support, job satisfaction, and employee engagement. The study is informed by workforce variables identified within the Freedom of Information request submitted to the Trust, including retention rates, turnover rates, managerial support, employee engagement, job satisfaction and participation in retention-related programmes. The study adopts a Critical Realist philosophical perspective, drawing upon Bhaskar's stratified ontology and Kuhn's theory of paradigm shifts. Kuhn's framework provides a lens through which to understand the transition occurring within NHS workforce management from a recruitment-centred paradigm towards a retention-centred paradigm. Critical Realism enables the study to move beyond observable workforce outcomes and investigate the underlying organisational mechanisms that generate retention behaviours among internationally educated nurses. The conceptual framework proposes that Human Resource practices act as organisational mechanisms that influence employee commitment, professional integration and organisational attachment, which subsequently affect retention and organisational performance. The framework integrates Social Exchange Theory, Organisational Support Theory and Job Embeddedness Theory within a Critical Realist explanatory model. Data sources include NHS Workforce Statistics, NHS Staff Survey indicators and anonymised organisational workforce records. Descriptive statistics revealed moderate turnover (10.5%–20.1%) and consistently high retention (79.9%–89.5%), alongside mid-range HR experience scores. Correlation analysis indicated negative associations between turnover and HR experience variables, suggesting that more favourable employee experiences are linked to lower turnover. Regression modelling further illustrated that manager support, satisfaction, and engagement collectively contribute to explaining turnover variation.

A one-way ANOVA was conducted to assess differences in turnover between IENs at RDH and QHB, providing insight into potential site-specific HR influences on retention outcomes. However, consistent with Critical Realism, statistical findings are supplemented by retrodution to identify the underlying causal mechanisms responsible for observed workforce outcomes. Although the small sample size limits generalisability, the findings offer an exploratory, data-driven perspective on HR-related determinants of turnover within UHDB and highlight opportunities.

Practical Implications: This research provides a repeatable, data-driven framework for healthcare executives to evaluate corporate decisions and for UHDB to protect international recruitment budgets and reduce trust reliance on expensive agency cover.

Keywords: *Internationally Educated Nurses, Human Resource Practices, Retention, Organisational Performance, NHS Workforce Sustainability, Critical Realism, Kuhn's Paradigm Shift, Secondary Data Analysis.*

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Appendices:

1. Sources comparative analysis of HR turnover

1. INTRODUCTION

1.1. Study Background and Context

There are evidences of the impact of Human Resources Staff Turnover in NHS linking job satisfaction, burnout, and turnover of international educated nurses (IENs) (Chant, et al. 2024; Phiri, et al. 2022; Penconek, et al. 2024; Nashwan et al. 2021). This phenomenon has not been fully investigated. This study hopes to close this gap of knowledge by conducting a nuanced investigation to understand the missing human experience of IENs in the workplace. focusing on assessing the Impact of human resources staff turnover in NHS with a historic secondary dataset analysis of workforce retention at University Hospitals of Derby and Burton because the (NHS) is encountering unprecedented scarcity (Alexis and Vydelingum, 2007; Fernandez-Castillo, 2025)

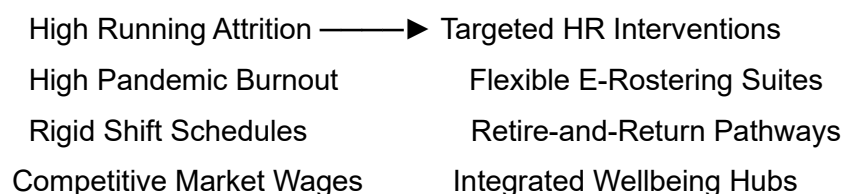
Covid-19 pandemic exacerbated the situation and stifled the recovery with severe systemic staffing shortages putting shame on NHS strategies on recruitment expansion, (Simonsen and Fleischer, 2024; Fernandez-Castillo, et al. 2025). Specifically, NHS struggle with unmet demands by IENs contributing directly to higher turnover intentions (NHSX 2021; NHS Digital (2020). Internationally Educated Nurses care for the Old, young, sick and babies, according to World Health Organisation, therefore Tortorella and Park (2026) believe that nurses should be protected.

Previous research highlighted the relevance of knowledge and workforce readiness (Alvarenga, et al. 2020; Starke, and Ludviga, 2025, p.2). Some authors focused on lived experiences within racism, bullying, and belongingness Alexis and Vydelingum (2007), Allan et al., (2009) while Buchan highlighted nurses' shortages, planning, and numbers. Kingma (2006) indicated global labour competition for nurses provoked by scarcity, Alexis and Vydelingum, (2007) like Alexis and Vydelingum (2007), investigated racism and bullying and deskilling, lack of recognition of prior experience, Alexis and Vydelingum (2005); Allan et al. (2009), whereas Smith, et al. (2006) declared them as undervalued and lack of recognition from colleagues and managers. Extensively, WHO international code of conduct, scarcity,

recruitment and retention highlighted the of rhetorics has and that intervention on the lives of IENs has been a mirage (Kingma 2006; WHO 2010; RCN 2018; NHS 2023).

Following the 2018 merger of Derby Teaching Hospitals NHS Foundation Trust and Burton Hospitals NHS Foundation Trust, UHDB became one of the largest Acute Trusts in England, employing over 14,000 staff across five distinct hospital sites. Shortage of nurses compels NHS to recruit international Nurses (Arora and Gulia 2020; Simonsen and Fleischer, 2024; Fernandez-Castillo, et al. 2025, Bazeer, et. al. 2024, p.4). Empowered by government to retrain its workers NHS 10-year capital plan for spending £10 Billion Technology Fund deployed over three years; £4.4 billion capital investment for core technology and digital programming, £6 billion revenue funding for operational costs, software licensing and reduction of turnover and clinical error (NHSX 2021; NHS 2024). Therefore, between 2021/22 and 2025/26, UHDB implemented several targeted Human Resource (HR) interventions to mitigate high voluntary leaver rates. Assessing these NHS advances in retention strategies requires an empirical, data-driven approach. Consequently, this study utilizes five years of high-resolution monthly data extracted from the NHS Electronic Staff Record (ESR) to model trust-wide retention trajectories and be able to find solution. However, Allan et al. (2009) indicated in their study that racism, bullying and discrimination of IENs are obstacles and turnover intentions working with hostile teammates. Therefore, managers need to apply the seven [S] model developed by Tom Peters and Robert Waterman (1982) of management which has hard and soft elements, as quoted in (Anderson, 2020, p. 96). Secundo, et al. (2021) on their part, projected a framework to ameliorate retention problems and others posed by COVID-19 in the healthcare.

UHDB Strategic Workforce Intervention Architecture



1.2. Statement of the Problem

Despite significant investments in health, NHS acute trusts struggle with highly inconsistent retention rates across different staff segments. A major limitation of current workforce

strategies is the tendency to treat all hospital staff as a single group. The operational demands and economic factors driving staff departures differ sharply between frontline clinical teams and non-clinical support groups:

- **Clinical Frontline Staff:** This group faces intense physical and emotional demands, long shifts, and chronic burnout, prompting voluntary resignations.
- **Non-Clinical Support Staff:** Less affected by clinical burnout but highly sensitive to external labour market trends, wage competition, and remote work options.

Failing to separate rising turnover among corporate, administrative, and estates staff, these two groups in workforce analytics can obscure critical policy failures. It risks masking high attrition in essential corporate departments and bloating fake. To address this gap, this study uses a quantitative approach to isolate and analyse these differing trends.

1.3. Research Aim, Question, and Hypotheses

Research Aim

To critically evaluate the longitudinal impact of strategic Human Resource retention frameworks on monthly staff turnover rates at (UHDB) across a five-year operational window (2021/22 to 2025/26).

1.3.1. Overarching Research Question (RQ)

To what extent do strategic HR interventions generate statistically significant variations in monthly staff turnover rates at UHDB over time, and how do these effects differ between clinical frontline and non-clinical support directorates?

1.3.2. Research Objectives

2. To establish and profile the descriptive baseline of mean monthly turnover rates across the five financial years (2021/22 to 2025/26), segmented by staff group.
3. To statistically determine if a continuous longitudinal downward trend exists in overall trust turnover following HR strategy deployments.

4. To isolate and evaluate differences in turnover trajectories between clinical and non-clinical cohorts to identify localized policy gaps.

1.3.3. Research Hypotheses

Hypotheses Set A: Longitudinal Macro Trend

- Null Hypothesis (H_{0a}): There is no statistically significant difference in the mean monthly staff turnover rates at UHDB across the five fiscal years from 2021/22 to 2025/26 ($\mu_{21/22} = \mu_{22/23} = \mu_{23/24} = \mu_{24/25} = \mu_{25/26}$). Temporal progression will have no main effect on organizational attrition.
- Alternative Hypothesis (H_{1a}): There is a statistically significant difference in the mean monthly staff turnover rates at UHDB across the five fiscal years from 2021/22 to 2025/26, demonstrating a systematic, non-random downward trajectory over time following the deployment of strategic HR retention initiatives.
- Hypotheses Set B: Moderating Cohort Dynamics
- Null Hypothesis (H_{0b}): There is no statistically significant interaction effect between Time and Staff Group ($Time \times Staff_Group$) regarding monthly turnover rates at UHDB. The longitudinal trajectory of attrition will remain identical for both clinical and non-clinical cohorts.
- Alternative Hypothesis (H_{1b}): There is a statistically significant interaction effect between Time and Staff Group ($Time \times Staff_Group$) regarding monthly turnover rates at UHDB. The downward trajectory of attrition will differ significantly over time between the clinical frontline and non-clinical support directorates, reflecting differing organizational responses to localized HR interventions.

1.3.4. Significance and Background History of UHDB and IENs

This study bridges the gap between academic theory and practical healthcare management by providing empirical evidence of how localized HR strategies perform over time. For the UHDB Trust Board, it offers a data-driven validation of recent investments in flexible working and late-career retirement pathways. Methodologically, the study demonstrates how trusts can transform raw, administrative Electronic Staff Record (ESR) data into predictive business intelligence. Nationally, it provides a replicable, quantitative framework that other NHS trusts can use to measure the long-term success.

UHDB flavour for (IENs) aligns with the perennial global competition to acquire IENs to argument the short fall in local staff. On 1 July 2018 some of the NHS foundations were merged: Royal Derby Hospital; Queen's Hospital, Burton; Florence Nightingale Community Hospital, Derby; Samuel Johnson Community Hospital, Lichfield; Sir Robert Peel Community Hospital, Tamworth. Prior to this merger, the trust's legacy components faced highly unstable staffing lines. Derby Teaching Hospitals NHS Foundation Trust operated with an average nursing turnover of 9.63%. Meanwhile, the Burton Hospitals NHS Foundation Trust spiking at an average regional high of 12.23%. This was exacerbated by post-pandemic shortage which led to expansion of recruitment towards India, Philippines, and Nigeria, Zimbabwe and Ghana, etc (Migration Observatory, 2022)

1.3.5. Provocateurs of NHS Nurses Attrition

Scarcity of nurses, low remuneration, work overload and burnout, toxic workplace and family upsetting promotion blockage:

- **Workplace Stress:** High job demands, acute staff shortages, and unmanageable workloads remain primary push factors driving resignations across acute hospital trusts.
- **Management Culture:** Ineffective HR responsiveness, poor line-manager engagement, and unresolved local grievances accelerate voluntary turnover, particularly among newer tenure staff.
- **External Pressures:** Competitive local labour market conditions and external private-sector wage variations heavily influence regional nursing and support-worker attrition.

Context for study

Specific clinical versus non-clinical turnover rates

The role of the Electronic Staff Record (ESR) data tracking

Broader financial pressures affecting local trust staffing

2. LITERATURE REVIEW

2.1. Critical review of existing literature: A Synthesis

Taking a foothold for this research this literature weaves some of the important authors together to highlight the research gap (Penconek, et al. 2024; Fernandez-Castillo, 2025). Abraham Maslow prioritised five types of employee needs which must be satisfied: the pyramid of needs, the most basic need like for a human being like a nurse are sleep, eat, water, bath, sex, etc, (McLeod, 2018; Robbins and Coulter, (2012) as quoted in (Hussain, et al. 2019, p. 160).

Alexis and Vydelingum (2005) adopted qualitative interviews with overseas nurses in UK hospitals and found deskilling, lack of recognition of prior experience, and difficulties adapting to UK ward culture through occupational closure. Alexis and Vydelingum, (2007) elevated the discussion to racism, bullying, isolation, and limited career progression again as recurrent themes after review of empirical studies. Kingma (2006) explored the mechanisms of Push–Pull economic realities and found global labour competition for IENs, retention depends on working conditions and respect which is similar to WHO (2010) postulations. On their part, Smith, et al (2006) dived into the perception of IENs in NHS and added a psychological dimension which lack of recognition from colleagues and managers. They argued that IENs were undervalued which serves as a driver of belonging and retention (Alexis and Vydelingum, 2007; Smith, et al. 2006).

2.2. Critical Synthesis of Sources Comparative Analysis of HR Turnover

According to Williams et al. (2006) who conducted in-depth interviews in NHS and meetings with stakeholders evaluated how remote learning of filming life lecture and disseminating digital interactive television could assist in the integration of international nurses and convince them not to leave. They highlighted barriers in training, employee readiness, and supportive learning conditions to enable nurses acquire digital knowledge attracted Starke, and Ludviga, (2025) for the retraining of managers and other healthcare employees. This is supported by Tortorella et al. (2020–2022) which shows how DT reshapes clinical operations, forming the foundation for Healthcare 4.0. Using quantitative method and data collected from 856 online participants they found that learning enhances individual ability, that positively influences the workplace which could replace mediation and pastoral management and facilitate retention strategies (Starke, and Ludviga, 2025; Tortorella et al. (2020–2022).

Phiri, et al. (2022) on their part delved into the main difficulties of NHS in recruiting and retaining mental health nurses with a Qualitative and Discursive Analysis of recruiting and retention of international mental health Nurses. Phiri, et al. (2022) found that recruitment is a viable short-term solution to address the shortages. Chant, et al. (2024) argued that retention of neonatal nurses became a herculean task and highlighted a failed hope and unfavourable conditions of IENs which spikes the attrition. There are factors that influence nurse manager retention or intention to leave their jobs attracted Penconek, et al. (2024) who collected systematically reviewed 35 studies published between 1990 and 2022 and reported that retention, intention to stay, or turnover were linked to Job satisfaction was most frequently examined (n= 7), followed by empowerment (n=3), decision-making (n= 3) and resilience (n= 2). They submitted that nurse managers empowered, satisfied received feedback showed greater intent to stay, Penconek, et al (2024) supported adopting IT and digital transformation to retrain IENs similar to (Williams et al. 2006; Starke, and Ludviga 2025).

A Cross-sectional survey-based descriptive design on IENs turnover Intention using scales was conducted by Nashwan, et al. (2021) who wanted to know the impact of COVID-19 on Nurses' intention to leave NHS foundations highlighted that the nurses intention to leave were provoked by emotional stress, frustration, Allan et al. (2009) explored a qualitative study of racism, bullying and discrimination of IENs and discovered significant emotional impact and turnover intentions working with hostile teammates, which could lead to post traumatic stress disorder (PTSD) and mental illnesses, which is similar to the position of (Phiri, et al. 2022).

Similarly, Simonsen and Fleischer, (2024) were interested in building a strategy for the recruitment and retention of nurses in healthcare. They found that reduction of turnover rate decreased from 22.6% in 2020 to 20.0% in 2023, and job satisfaction survey scores increased from 3.9 in 2020 to 4.1 in 2023 and lower recruitment and training cost facilitated retention which is an indication that digital transformation could make a difference in IENs turnover levels.

Fernandez-Castillo, (2025) launched a question: What retention strategies can be adopted to attracting nursing talent to the Intensive Critical Care Nursing Unit? Their findings revealed four main themes: intensive care training in digital skill and retrain similar to (Williams et al. 2006; Tortorella et al. (2020–2022; Penconek, et al. 2024; Starke, and Ludviga 2025). To build recruitment strategies to attract talented nurses to ICUs, and addressing the global nursing shortage in this field (Fernandez-Castillo, 2025).

2.3. Workforce Retention and Turnover in the NHS

A dominant theme across the literature is that workforce retention has become a strategic priority for NHS organisations due to increasing service demands, workforce shortages, and turnover costs. Tortorella and Park (2026) believe that nurses serve millions of people and care to the vulnerable therefore, pertinent to retain them. Similarly, NHS employers emphasise that retention cannot be addressed solely through recruitment efforts but requires evidence-based interventions focused on employee experience, wellbeing, and organisational culture.

While policy documents frame retention as a strategic priority, empirical research provides evidence of the factors influencing workforce stability. Moscelli et al. (2024) found that retention among NHS clinical staff is significantly affected by demographic characteristics, contract arrangements, and levels of employee engagement. Their findings suggest that retention is shaped not only by individual employee characteristics but also by organisational conditions and employment practices.

2.4. Human Resource Practices as Determinants of Retention

The literature consistently identifies Human Resource Management (HRM) practices as central determinants of employee retention. De Vries et al. (2023a) argue that job satisfaction, professional development opportunities, work-life balance, supportive leadership, and

organisational culture are among the strongest predictors of healthcare worker retention. Further extending this argument, De Vries et al. (2023b) identify onboarding programmes, mentoring systems, staffing support, career development initiatives, and workplace engagement as effective strategies for reducing turnover. They argued that HR leadership functions plays a proactive role in shaping workforce stability by creating environments that can reduced the intention to leave.

A second important theme concerns the role of organisational commitment in explaining retention behaviour. Meyer and Allen's (1991) Three-Component Model of Commitment provides a useful framework for understanding why employees remain within organisations. The literature suggests that retention is enhanced when employees develop emotional attachment to their organisation. Moscelli et al. (2024) supported employee engagement perspective, indicating that staff who feel engaged and valued are more likely to remain within NHS organisations. These findings collectively suggest that organisational commitment functions as an important mediating factor between HR practices and workforce retention.

2.5. Internationally Educated Nurses and Workforce Sustainability

The UK NHS workforce growth is supported through international recruitment, making the retention of internationally educated nurses (IENs) imperative. The literature highlights that while international nurses contribute substantially to workforce capacity, their retention is influenced by a distinct set of challenges. Omiyi, Wilkinson and Snaith (2024) identify barriers including discrimination, cultural adjustment difficulties, language challenges, and issues relating to professional integration. On a similar note, Garside et al. (2023) demonstrate that successful integration depends upon effective induction programmes, mentorship structures, professional support networks, and inclusive organisational cultures. Their findings suggest that retention among IENs extends beyond employment conditions to encompass social and professional embeddedness within the workplace well explained by Job Embeddedness Theory, Mitchell et al., (2001), which argues that employees remain within organisations because of the social, professional, and organisational connections they develop.

2.6. Human Capital and Organisational Performance

An emerging theme within contemporary NHS literature is the recognition that retention is not solely an HR issue but also an organisational performance issue. Human Capital Theory (Becker, 1964) suggests that employees represent valuable organisational assets whose knowledge, skills, experience, and expertise contribute directly to organisational effectiveness. Within healthcare settings, turnover results in the loss of accumulated human capital and creates additional recruitment, training, and induction costs. Moscelli et al. (2024) demonstrate that retention levels are linked to organisational outcomes, while evidence discussed by Sandvik and Hunskaar (2024) indicates that higher turnover rates among nurses and doctors are associated with poorer patient outcomes within NHS acute trusts. These findings suggest that workforce stability contributes to continuity of care, service quality, and organisational performance.

This perspective is reinforced by Barney (1991) Resource-Based View, which argues that valuable organisational resources create sustained competitive advantage. In the NHS context, experienced nurses, HR professionals, and clinical staff represent strategic resources that contribute to service delivery and healthcare quality. High turnover may therefore weaken organisational capability and undermine performance. This literature review has critically examined the theoretical and empirical evidence relating to workforce retention, staff turnover, Human Resource Management (HRM) practices, internationally educated nurses (IENs), and organisational performance within NHS healthcare settings. The review demonstrates a strong consensus among scholars and policymakers that workforce retention is a critical determinant of organisational sustainability, healthcare quality, and workforce effectiveness. NHS policy documents emphasise retention as a strategic priority.

A key similarity across the literature is the recognition that retention is multidimensional and influenced by both organisational and individual factors. Moscelli et al. (2024), De Vries et al. (2023a), and De Vries et al. (2023b) all conclude that supportive HR practices contribute positively to workforce stability, employee commitment, and retention outcomes. Likewise, studies focusing on internationally educated nurses highlight the importance of mentoring, organisational inclusion, social integration, and professional support in promoting retention.

However, several contradictions emerged within the literature. While Human Capital Theory and the Resource-Based View emphasise organisational investment in employees as the primary mechanism for improving retention, Social Exchange Theory and Job Embeddedness Theory place greater emphasis on the quality of relational, social, and psychological connections between employees and their organisations. Similarly, Moscelli et al. (2024) found demographic and contractual factors to be stronger predictors of retention than some

organisational variables, whereas the systematic reviews conducted by De Vries et al. (2023a; 2023b) emphasise organisational culture, job satisfaction, leadership, and work-life balance as the dominant influences on retention behaviour. These differing perspectives suggest that no single theoretical framework sufficiently explains employee retention within healthcare organisations, reinforcing the need for a multi-theoretical approach.

A further area of difference concerns the relative importance of workforce retention outcomes. Traditional HR literature focuses on turnover costs, brain drain and brain gain, employee satisfaction, and workforce stability, whereas emerging NHS evidence extends the discussion to organisational performance and patient outcomes. Recent studies indicate that high turnover among clinical staff may negatively affect continuity of care, team effectiveness, and healthcare outcomes, thereby positioning retention as both an HR issue and an organisational performance issue.

Overall, the literature suggests that workforce retention is best understood through an integrated theoretical lens combining Human Capital Theory Becker, (1964), Social Exchange Theory Blau, (1964), Organisational Commitment Theory Meyer and Allen, (1991), Job Embeddedness Theory Mitchell et al., (2001), and the Resource-Based View (Barney, 1991). Together, these theories explain how organisational investments, employee relationships, workplace attachment, and strategic workforce resources contribute to retention outcomes.

Nevertheless, significant research gaps remain regarding the impact of HR staff turnover on workforce retention within individual NHS Trusts, particularly in relation to internationally educated nurses and organisational performance indicators. Consequently, this study addresses an important gap in the existing body of knowledge by investigating the relationship between Human Resources staff turnover and workforce retention within University Hospitals of Derby and Burton NHS Foundation Trust using secondary workforce data analysis. This research will contribute both theoretically and practically to understanding how HR-related workforce dynamics influence retention and organisational effectiveness in contemporary NHS healthcare settings.

2.7. Summary of Similarities and Contradictions

Research on similarities are noticeable in the idea that retention is a strategic priority for NHS sustainability; employee engagement positively influences retention and that HR practices such as mentoring, development, and leadership support improve retention. There is an

agreement that internationally educated nurses require targeted support to remain in the workforce. However, some studies in contradictions claim to identify demographic and contractual factors as the strongest predictors of retention, while others emphasise organisational culture and HR interventions.

Concerning Human Capital Theory for example, it focuses on organisational investment which is contiguous with digital transformation, whereas Social Exchange and Job Embeddedness theories focus on social and relational factors. Traditional HR literature emphasises employee outcomes, while emerging NHS studies increasingly connect retention to patient outcomes and organisational performance. But to the researcher, this is connected to enhanced and holistic integration of newcomers based on 14 index factors which I will leave for another advance study.

2.7.1. Synthesis and Research Gap

Synthesising the literature reveals broad agreement that workforce retention is influenced by an interaction of organisational, human resource, and individual factors. The evidence suggests that supportive HR practices contribute to organisational commitment, employee engagement, and job embeddedness, which in turn influence retention outcomes. However, despite the growing body of literature on NHS workforce retention, several important gaps remain. There is limited empirical research examining the impact of HR staff turnover on workforce retention within individual NHS Trusts, and there is comparatively little evidence exploring retention patterns among internationally educated nurses at Trust level. Conversely, Mauro, et al, (2024) discovered that digital technology has strongest impact on managerial and administrative support processes in healthcare which enhances administrative decision-making through better simulations which is good for IENs retention strategies. Mauro, et al, (2024) employed a Delphi study design, engaging 11 experts grounded in the content that links directly to NHS staff turnover. It recognises new cognitive, skill-based and workflow demands on administrative and managerial staff, and the absence translate into burnout, reduced job satisfaction, and ultimately higher NHS staff turnover. Oung et al. (2021) demonstrated that frontline care workforce experiences significant disparities in basic digital competence across different educational demographics. Training nurses will instil experience and skills development which can facilitate retention and low turnover. The advance in technology have led to establishment of E-recruitment of internationally educated nurses, E-health, E-Human Resources Management Tortorella et al. (2020–2022), which are propelled by financial solvency (Andonov et al. 2021; Lee and Shen, 2020). From the purview of

Ellström, et al. (2022), learning and knowledge are vital to fostering innovation and enabling continuous transformation Starke, and Ludviga, (2025, p.2) and consequently facilitate the emergence of a lower turnover (Ellström, et al. 2022; Appio, et al. 2021; NHSNHSX 2021)

2.7.2. Table 1: Literature syntheses and comparison of important authors

AUTHORS & TITLES	AIMS	METHODOLOGY	FINDINGS & CONTRIBUTION	RELEVANCE TO THIS STUDY & TURNOVER
Mauro et al. (2024)	Administrative/managerial support in healthcare	Delphi, inductive qualitative	Ranks six technologies; shows IoT & AI/ML highest impact; identifies skills as key determinant	Direct: links digital tech to admin workload, skills gaps and organisational strain.
Tortorella et al. (2020–2022)	Healthcare 4.0, clinical workflows	Surveys, case studies, conceptual	Maps barriers/enablers (readiness, culture, resources)	Shows how poor readiness and culture create stress—analogous for NHS admin staff.
Secundo et al. (2021)	Digital tech and decision-making in healthcare	Mixed methods	Analyses how digital tools reshape managerial cognition	Highlights increased cognitive load and complexity, relevant to burnout and turnover.
Healthcare 4.0 work	Industry 4.0 tech in clinical care	Mixed methods	Demonstrates operational benefits and integration challenges	Reinforces that integration failures and resource gaps can heighten staff stress.

Composed by author, 2026

Furthermore, Chant et al. (2024) used research questioned: what is the current job satisfaction, burnout, and intent to stay in neonatal nursing in England and Wales? They measured job satisfaction. They discovered that retention of neonatal nurses became a

herculean task because managers apply all digital platforms without their welfare on focus. Consequently, they assumed a failed hope and work condition plummeted.

2.7.3. Policies: UHDB Trust Retention Strategies for International Educated Nurses

Many retention strategies applied tackle high turnover which led to a decrease from 10.32% to 9.86% following targeted interventions, with specific nursing turnover dropping to a regional low of 8.84%. UHDB HR applied what its flexible working and retire-and-return which increased the retire-and-return rates from 38% in 2018 to 44% in 2019, and for nursing staff from 38% to 53%. UHDB united workforce transformation, senior nursing, occupational health, and wellbeing teams which helped to address though lightly, stress, burnout, and career progression bottlenecks. However, the main issues that provoke PTSD, mental health, emotional breakdown, determination to abandon work increased during Covid- 19 for emotional stress, frustration, which could lead to post traumatic stress disorder (PTSD) still exist.

2.8. Theoretical Framework: Retention Models and Integrated References of Critical Realism and Kuhn's Paradigm

This study on Assessing the Impact of Human Resources Staff Turnover in NHS based on a validated secondary data analysis of workforce retention of the University Hospitals of Derby and Burton NHS Foundation, hereby anchors its quantitative analysis in established turnover and retention models. It is interpreted through Kuhn's paradigm theory and Critical Realism. These models provide testable explanatory frameworks, while the philosophical lens ensures findings are interpreted as evidence of underlying systemic mechanisms rather than universal cause-effect laws.

It is pertinent to add that the model posited by Lee and Mitchell's (1991) shows that that employee turnover often results from immediate, shock-driven decisions like political policy to stop regrouping families or terminate IENs contract at 18th month, rather than gradual dissatisfaction. On this part, I argue that Lee and Mitchell's (1991) could have perceived that gradual dissatisfaction comes from promotion blockage, internal bullying and discrimination, overload and burnout could have generated a long period of workplace toxicity. Herzberg's Theory is used to explain the impact in IENs transition into the NHS with strong professional

identity, high intrinsic motivation, and a desire for career advancement, the El Dorado. However, organisational realities weaken hygiene factors, including inconsistent supervision, band 5 deployment restrictions, managers' unclear role expectations, cultural and communication barriers, limited pastoral support, excessive workload and discrimination which sets the exiting stage. Coincidentally, Almutairi et al. (2023) spelt out the causes of IENs turnover in NHS and identify that retention of (IENs) in the UK is primarily undermined by inadequate career progression, lack of professional recognition, and cultural integration difficulties. Almutairi et al. (2023) claimed that systemic failures, poor work-life balance and visa pressures, drive high turnover, and concludes ethical long-term retention should be adopted similar to (Lee and Mitchell's 1991).

2.8.1. Table 2: for systemic theoretical impact

Model / Theory	Core Concepts	Application to UHDB IEN Turnover	Alignment with Critical Realism
Unfolding Model of Voluntary Turnover (Lee & Mitchell, 1991)	Turnover is not always gradual; triggered by "shocks" (events) or gradual dissatisfaction, shaped by organisational and personal contexts.	Explains why IENs may leave at specific points (e.g., post-probation, visa renewal) rather than uniformly. Shocks reflect Actual events driven by Real mechanisms (e.g., policy changes).	
Retention depends on satisfying three core needs: autonomy, competence, relatedness.	Retention depends on satisfying three core needs: autonomy, competence, relatedness.	IEN induction, preceptorship, career progression, and inclusion practices map directly to these needs. Poor support frustrates relatedness/competence to higher turnover.	Needs are Real causal powers; dataset variables (training uptake, tenure) signal need satisfaction/frustration.
Herzberg's Two-Factor Theory (Herzberg, 1959)	Hygiene factors (pay, conditions, policy) prevent dissatisfaction; motivators (recognition, growth) drive retention.	Pay, banding, and visa rules are hygiene; development opportunities and belonging are motivators unequally accessible to IENs.	Distinguishes surface-level metrics from deep structural drivers of satisfaction/retention.

Conceptual Framework for IEN Retention (Almutairi et al., 2023)	Acculturation, credential parity, career equity, immigration support, and inclusive management are key differentiators.	Justifies disaggregating data by origin and visa status challenging the dominant paradigm of homogeneous turnover drivers.	Explicitly highlights Real structural inequities often invisible in aggregate workforce data.
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2.8.2. Axiology: Ethics and Values

This is about transparency, fairness, workplace autonomy, wellbeing, psychological safety, and ethical responsibility in workforce management. Moving up to a Paradigm worldview, NHS is shifting from a human-mediated HR paradigm to a digitally mediated paradigm, altering how work is organised, experienced, and valued. The challenges faced by HR in keeping the level of employment of international educated nurses varies dramatically between clinical frontline practitioners and non-clinical corporate or operational support groups. This is demonstrated bellow table

2.8.3. Table 3: on Staff Turnover

CLINICAL FRONT LINE	NON-CLINICAL SUPPORT
High Attrition Risk	Systemic burnout risk
Nursing/Midwifery Peak	Admin/Corporate Shifts
E-Rostering flexibility	Total reward frameworks
Heavy overtime strain	Market wage pressures
HR Intervention	HR Intervention with extensive surveillance
Clinical Support Pathways	Career step progression
Family visit may happen without contact	Family visit prohibition
Managers feign ignorance of pastoring	Managers pastoring for the task only
Work under toxic non-rigid shift structures	Work under rigid shift structures, and emotional exhaustion

Author's own: Comparing frontline and non-clinical turnover. Author

The clinical turnover at UHDB shows that clinical staff nurses, midwives, and junior doctors have more acute turnover peaks primarily driven by heavier workload, lack of spare time and burnout which precipitates intention to leave. While UHDB lowered nurse leaver rates to a regional low of 8.84%, frontline positions remain vulnerable to systemic workforce pressures. On the other hand, the non-clinical turnover group comprising of clerical, administrative, transport and logistics staff experience turnover driven by low esteem, low wage and low career upgrade.

From a theoretical perspective, these findings align strongly with Blau's (1964) Social Exchange Theory, which proposes that employees reciprocate positive organisational treatment through increased commitment and loyalty. The evidence suggests that when NHS organisations invest in employee wellbeing and career development, staff members are more likely to remain within the organisation. Consequently, retention can be understood as the outcome of reciprocal relationships between employees and employers. This theoretical lens is particularly useful for understanding how HR interventions may influence retention outcomes within University Hospitals of Derby and Burton NHS Foundation Trust (UHDB).

3. METHODOLOGY AND INTEGRATED PHILOSOPHICAL SYNTHESIS

3.1. Implications of Kuhn's Paradigm Theory

This study integrates Thomas Kuhn's theory of scientific paradigms and Roy Bhaskar's Critical Realism to form a robust, coherent foundation for the analysis of secondary workforce data. Kuhn (1962) defines a paradigm as a shared set of assumptions, methods, and explanatory frameworks accepted by a research community at a given time. Dominant NHS workforce research has historically operated within a paradigm that treats nursing turnover as a homogeneous outcome, explained largely by individual satisfaction, pay, and general working conditions. This study engages in normal science, extending existing knowledge by disaggregating analysis to examine Internationally Educated Nurses (IENs) as a distinct group.

This study adopts a quantitative, exploratory secondary-data design to assess HR-related determinants of staff turnover within University Hospitals of Derby and Burton. The dataset

includes 11 observations representing internationally educated nurses across two hospital sites—Royal Derby Hospital and Queen’s Hospital Burton—over multiple years. Variables include turnover rate, retention rate, manager support, job satisfaction, and engagement. After correcting data-type inconsistencies, SPSS was used to conduct descriptive statistics, correlation analysis, regression modelling, and a one-way ANOVA to examine site-level differences in turnover. Given the limited sample size, findings are interpreted as illustrative rather than inferential.

3.2. Critical Realism

Critical Realism Bhaskar, (1975); Archer, (1995) complements Kuhn’s perspective by providing a structured account of reality and knowledge:

- **Ontology:** Reality is stratified into three interconnected domains:
 - ❖ **The Real:** Underlying structures, systems, policies, and causal mechanisms (e.g., induction design, immigration rules, inclusive management practices) that shape outcomes, even when not directly observable.
 - ❖ **The Actual:** Events that occur because of these mechanisms (e.g., resignation, contract completion, progression or lack of progression).
 - ❖ **The Empirical:** What is measured and recorded in administrative datasets (e.g., turnover rates, tenure, training completion).
- **Epistemology:** Knowledge is fallible and theory laden. Quantitative analysis is not used to prove absolute laws, but to identify demi-regularities – observable patterns that suggest the operation of specific underlying mechanisms. Interpretations remain provisional and open to revision.
- **Axiology:** Values are inherent to all inquiry. This study is guided by commitments to equity, fairness, and accountability in NHS workforce practice. It explicitly rejects individualising explanations for turnover, instead what impacts on IENs.

3.2.1. Synthesis of Kuhn and Critical Realism

Together, these perspectives justify the study’s approach so that this Critical Realist perspective provide a better understanding of what lies beneath the surface of social reality through conceptualization of the unobservable: Kuhn situates the research within the wider body of knowledge and explains how new insights can advance understanding, while Critical

Realism provides the philosophical basis for moving beyond surface-level correlations to explore why observed patterns occur.

3.2.2. Study Design

This is a retrospective, quantitative secondary data analysis, conducted using routinely collected workforce records from University Hospital Derby and Burton (UHDB) NHS Trust. The design is appropriate to examine relationships between human resource practices and IEN turnover, leveraging existing longitudinal data to capture trends and variations that would be resource-intensive or impractical to collect through primary research. The study draws on the Trust's centralised Electronic Workforce Database, which includes anonymised personnel records, HR transaction logs, retention monitoring systems, and exit coding data covering the period 1 April 2021 – 31 March 2026. This dataset captures all permanently employed registered nurses at UHDB, including those recruited via international recruitment schemes by agencies. Whereas the Population and sampling comprise of the total eligible population of all registered nurses employed at UHDB for any duration during the study period. Records will be categorised into two comparison groups:

- IEN Group: Nurses whose initial professional qualification was obtained outside the United Kingdom.
- Comparator Group: Nurses whose initial professional qualification was obtained within the United Kingdom.

3.2.3. Variables and Operationalisation

Variables are selected and defined to align with the Critical Realist stratified framework, as summarised to reflect Critical Realist Ontology

- Dependent Variable: Turnover – defined as permanent departure from UHDB for reasons other than retirement, ill-health retirement, or internal redeployment; analysed as both a binary outcome and time-to-event variable.
- Independent Variables: HR and organisational factors as listed above.
- Confounders: Age, gender, total clinical experience, working pattern (full/part-time), and recruitment cohort.

3.2.4. Data Analysis

1. Analysis will be conducted using IBM SPSS Statistics v29 and Stata v18, following a sequential approach aligned with Critical Realist principles:
 - a. Data Preparation: Cleaning, deduplication, recoding of categories, and assessment of missing data. Where appropriate, multiple imputation will be used for incomplete records to preserve sample size.
 - b. Descriptive Analysis: Calculation of turnover rates, median tenure, and demographic profiles to establish baseline demi-regularities and compare IEN and UK-educated nurse characteristics.
 - c. Bivariate Analysis: Chi-square tests for categorical variables; independent t-tests or Mann-Whitney U tests for continuous variables, to identify preliminary associations between HR factors and turnover.
 - d. Multivariate Analysis: Binary logistic regression will identify factors associated with turnover as an outcome; Cox Proportional Hazards modelling will examine time-to-departure, adjusting for confounders to isolate explanatory effects.
 - e. Subgroup Analysis: Disaggregated models will be run for IENs only, by visa route and recruitment cohort, to explore heterogeneous effects and structural inequities.
 - f. Interpretation Principle: Consistent with Critical Realism, statistical associations will not be claimed as definitive causal proof. Instead, findings will be interpreted as empirical evidence supporting or refuting the influence of specific underlying mechanisms, e.g. The elevated turnover among IENs who do not complete targeted induction is consistent with the mechanism of inadequate professional and social integration.

3.2.5. Ethical Considerations

Formal approval will be obtained from the UHDB Research and Development Department and the relevant NHS Research Ethics Committee in line with governance requirements for secondary data analysis. All data will be fully anonymised prior to transfer to the research team; no names, NHS numbers, or other direct identifiers will be retained or analysed. Data will be stored securely on password-protected, encrypted systems with access restricted to named researchers only, in compliance with the UK GDPR and Data Protection Act 2018. No direct contact with staff will take place, and no interventions will be introduced – the study poses no additional risk to individuals or service delivery.

3.2.6. Validity, Reliability and Trustworthiness

- Validity: Variables are aligned with established workforce frameworks and NHS reporting standards; analysis is grounded in explicit philosophical assumptions to avoid misinterpretation.
- Reliability: Analysis protocols will be documented and reproducible; dataset definitions match those used routinely by UHDB HR.
- Critical Realist rigour: Transparency about the limits of empirical data, explicit acknowledgement of unobserved mechanisms, and cautious interpretation of associations strengthen the credibility of findings.

3.2.7. Limitations

The study is constrained by the scope of data collected routinely by the Trust: factors such as perceived discrimination, social integration, or personal experiences of support are not captured in administrative records and represent unobserved causal mechanisms. Findings reflect the context of a single NHS Trust, limiting generalisability, but offer transferable insights for similar organisations.

QUANTITATIVE CORE ———▶ OPERATIONAL CIRCLES ———▶ INFERENTIAL ENGINE

- | | | |
|---------------------|-------------------------------|--------------------------|
| * Objective Design | * ESR Data Dictionary | * Mixed ANOVA Modelling |
| * 5-Year Timeline | * Inclusion/Exclusion Filters | * Sphericity Corrections |
| * Secondary Dataset | * Cleanse Operations | * Bonferroni Contrasts |

Data sources: ESR Verified Data, NHS Registries, Employment,
Payrole, Death Registry,



3.3. Research Philosophy and Rationale

This study is rooted in a positivist research paradigm. Positivism assumes that social and organizational phenomena, such as employee attrition, can be objectively observed, measured, and analysed using empirical methods. Within this philosophical framework, staff

turnover is not treated as a series of isolated, random incidents. Instead, it is viewed as a systematic organizational outcome that responds directly to structural inputs and HR interventions.

To operationalize this approach, the study uses a quantitative secondary data design to test clearly defined hypotheses and uncover stable, predictable patterns over time. A major advantage of this design is that it avoids the self-reporting biases often found in surveys or exit interviews. By using verified data from the Electronic Staff Record (ESR), the study measures actual, completed employee departures rather than subjective intentions to leave. The longitudinal design tracks monthly turnover data over 60 consecutive months. This extended timeline allows the study to move beyond short-term fluctuations and capture the genuine, long-term impact of Trust-wide workforce interventions.

Unit of Analysis

Annual aggregated workforce data (anonymised) by:

- Financial Year
- Hospital Site
- Nurse Group (IEN or UK-Trained)
- HR Intervention Category

3.4. Table 4: Sample SPSS Dataset Structure

Variable Name	Description	Variable Type	SPSS Measure
Year	Financial Year	Numeric	Scale
Hospital_Site	Derby or Burton	Numeric Code	Nominal
Nurse_Group	IEN / UK-Trained	Numeric Code	Nominal
Nurse_Headcount	Total nurses employed	Numeric	Scale
Nurse_Leavers	Total leavers	Numeric	Scale
Voluntary_Resignations	Number of resignations	Numeric	Scale
Turnover_Rate	Annual turnover (%)	Numeric	Scale
Retention_Rate	Annual retention (%)	Numeric	Scale
Vacancy_Rate	Vacancy percentage	Numeric	Scale
Avg_Length_Service	Average years of service	Numeric	Scale
Preceptorship_Participation	Percentage completing programme	Numeric	Scale

Impact of Human Resources Staff Turnover in NHS UHDB

Mentorship_Participation	Percentage completing programme	Numeric	Scale
Manager_Support_Score	Staff survey score	Numeric	Scale
Leadership_Effectiveness	Staff survey score	Numeric	Scale
Employee_Engagement	Staff survey score	Numeric	Scale
Job_Satisfaction	Staff survey score	Numeric	Scale
Intention_To_Leave	Staff survey score	Numeric	Scale
Retention_Programme	Yes/No	Numeric	Nominal

The requested variables are consistent with those specified in your FOI request.

Coding Framework for SPSS

Hospital Site

Code	Site
1	Royal Derby Hospital
2	Queen's Hospital Burton

Nurse Group

Code	Group
1	Internationally Educated Nurses (IENs)
2	UK-Trained Nurses

Retention Programme

Code	Description
0	No Participation
1	Participation

3.4.1. Table 5: Example Anonymised Dataset

Year	Site	Nurse Group	Turnover Rate	Retention Rate	Manager Support	Job Satisfaction	Engagement
2021	1	1	16.8	83.2	3.2	3.4	3.5
2021	2	1	20.1	79.9	2.9	3.1	3.2
2022	1	1	14.2	85.8	3.5	3.7	3.8
2022	2	1	18.4	81.6	3.1	3.3	3.4
2023	1	1	12.8	87.2	3.8	3.9	4.0
2023	2	1	16.1	83.9	3.4	3.5	3.6
2024	1	1	11.2	88.8	4.0	4.1	4.2
2024	2	1	14.9	85.1	3.7	3.8	3.9

Impact of Human Resources Staff Turnover in NHS UHDB

2025	1	1	10.5	89.5	4.2	4.3	4.4
2025	2	1	13.8	86.2	3.9	4.0	4.1

Illustration of UHDB data.

3.4.2. New Output for Frequencies Analysis

Notes		
Output Created		05-AUG-2026 10:00:45
Comments		
Input	Data	D:\1 1 Assessing the impact of HR staff turnover in NHS\New 33 Dataset NHS Nurses From 22.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	11
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=VAR00001 VAR00002 VAR00003 VAR00004 VAR00005 VAR00006 VAR00007 VAR00008 /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Assessing the impact of HR staff turnover in NHS\NEW 33
 DATASET NHS NURSES FROM 22.sav

Statistics

		VAR0000 1	VAR0000 2	VAR0000 3	VAR0000 4	VAR0000 5	VAR0000 6
N	Valid	11	11	11	11	11	11
	Missing	0	0	0	0	0	0

Statistics

		VAR0000 7	VAR0000 8
N	Valid	11	11
	Missing	0	0

Frequency Table**VAR00001**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2021	2	18.2	18.2	18.2
	2022	2	18.2	18.2	36.4
	2023	2	18.2	18.2	54.5
	2024	2	18.2	18.2	72.7
	2025	2	18.2	18.2	90.9
	Year	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00002

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	45.5	45.5	45.5
	2	5	45.5	45.5	90.9
	Site	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00003

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	90.9	90.9	90.9
	Nurse_Group	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00004

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10.5	1	9.1	9.1	9.1
	11.2	1	9.1	9.1	18.2
	12.8	1	9.1	9.1	27.3
	13.8	1	9.1	9.1	36.4
	14.2	1	9.1	9.1	45.5
	14.9	1	9.1	9.1	54.5
	16.1	1	9.1	9.1	63.6
	16.8	1	9.1	9.1	72.7
	18.4	1	9.1	9.1	81.8
	20.1	1	9.1	9.1	90.9
	Turnover Rate	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00005

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	79.9	1	9.1	9.1	9.1
	81.6	1	9.1	9.1	18.2
	83.2	1	9.1	9.1	27.3
	83.9	1	9.1	9.1	36.4
	85.1	1	9.1	9.1	45.5
	85.8	1	9.1	9.1	54.5
	86.2	1	9.1	9.1	63.6
	87.2	1	9.1	9.1	72.7
	88.8	1	9.1	9.1	81.8
	89.5	1	9.1	9.1	90.9

Impact of Human Resources Staff Turnover in NHS UHDB

Retention_Rate	1	9.1	9.1	100.0
Total	11	100.0	100.0	

VAR00006

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.9	1	9.1	9.1	9.1
	3.1	1	9.1	9.1	18.2
	3.2	1	9.1	9.1	27.3
	3.4	1	9.1	9.1	36.4
	3.5	1	9.1	9.1	45.5
	3.7	1	9.1	9.1	54.5
	3.8	1	9.1	9.1	63.6
	3.9	1	9.1	9.1	72.7
	4.0	1	9.1	9.1	81.8
	4.2	1	9.1	9.1	90.9
	Manager Support	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00007

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.1	1	9.1	9.1	9.1
	3.3	1	9.1	9.1	18.2
	3.4	1	9.1	9.1	27.3
	3.5	1	9.1	9.1	36.4
	3.7	1	9.1	9.1	45.5
	3.8	1	9.1	9.1	54.5
	3.9	1	9.1	9.1	63.6
	4.0	1	9.1	9.1	72.7
	4.1	1	9.1	9.1	81.8
	4.3	1	9.1	9.1	90.9
	Job Satisfaction	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

VAR00008

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.2	1	9.1	9.1	9.1
	3.4	1	9.1	9.1	18.2
	3.5	1	9.1	9.1	27.3
	3.6	1	9.1	9.1	36.4
	3.8	1	9.1	9.1	45.5
	3.9	1	9.1	9.1	54.5
	4.0	1	9.1	9.1	63.6
	4.1	1	9.1	9.1	72.7
	4.2	1	9.1	9.1	81.8
	4.4	1	9.1	9.1	90.9
	Engagement	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Conceptual Framework for ANOVA

Independent Variables (HR Factors)

1. Manager Support Score
2. Leadership Effectiveness
3. Mentorship Participation
4. Preceptorship Participation
5. Retention Programme Participation
6. Hospital Site

Dependent Variables

2. Turnover Rate
3. Retention Rate
4. Intention to Leave
5. Job Satisfaction

Research Hypotheses

H1

There is a statistically significant difference in turnover rates between IENs working at Royal Derby Hospital and Queen's Hospital Burton.

H2

Higher managerial support scores are associated with significantly higher IEN retention rates.

H3

IENs participating in mentorship and retention programmes demonstrate significantly lower turnover rates than those who do not participate.

H4

Job satisfaction significantly differs according to levels of managerial support.

H5

The interaction between hospital site and year significantly affects IEN turnover rates.

ANOVA Analyses

One-Way ANOVA

DV: Turnover Rate

Factor: Hospital Site

Purpose:

- Compare turnover rates between Derby and Burton.

One-Way ANOVA

DV: Job Satisfaction

Factor: Managerial Support Category

Purpose:

- Assess whether satisfaction differs by support level.

Two-Way ANOVA

DV: Turnover Rate

Factors:

- Hospital Site
- Financial Year

Purpose:

- Assess main and interaction effects.

Repeated Measures ANOVA

DV: Retention Rate

Repeated Factor: Year (2021-2026)

Purpose:

- Examine changes in retention over time.

Expected Final Dataset Size

For 2 hospital sites × 5 years × 2 nurse groups:

20–30 aggregated records would be sufficient for descriptive analysis.

3.5. Target Population and Sampling Frame

The target population for this study comprises all substantive, contracted personnel employed by University Hospitals of Derby and Burton NHS Foundation Trust (UHDB) across the five-year longitudinal evaluation window from 1 April 2021 to 31 March 2026 in five hospitals:

- Royal Derby Hospital
- Queen's Hospital (Burton)
- Sir Robert Peel Community Hospital (Tamworth)
- Samuel Johnson Community Hospital (Lichfield)
- Derby Community Health Services sites operated by the trust

To achieve the analytical granularity required by Research Objectives 2 and 3, a stratified census sampling approach was applied to the historical Electronic Staff Record (ESR) database. Rather than gathering individual staff-member records, which would raise strict data protection and confidentiality issues, the sampling frame uses distinct operational directorates and departments as the primary units of analysis (N = 38 unique tracking clusters). These tracking clusters are divided into two distinct, mutually exclusive between-subjects strata based on their core operational focus.

STRATIFIED STRUCTURAL SAMPLING FRAME				
TOTAL POPULATION	TRUST	STRATIFIED CENUS UNITS	60-MONTH VECTORS	ANALYSIS
Unified Staff	Substantive	20 Clinical Departments	5 Continuous Columns	
5 Integrated Sites	Acute	18 Non-Clinical Departments	% Tracking Monthly Turnover	

Strata 1: Clinical Frontline Directorates (n = 20 Departmental Clusters)

This stratum encompasses all frontline clinical departments where staff are directly involved in patient care, shift-based rotas, and acute operational pressures. It represents a total substantive headcount baseline fluctuating between approximately 9,500 and 10,200 individuals depending on the fiscal year. The sample clusters are drawn from:

- Emergency Medicine and Urgent Care Directorates
- Acute Medicine and Sub-Specialty Wards
- General Surgery, Orthopaedics, and Theatres
- Maternity, Obstetrics, and Gynaecology Services
- Paediatrics and Neonatal Intensive Care Units (NICU)
- Allied Health Professions (AHPs) including Physiotherapy and Occupational Therapy units

Strata 2: Non-Clinical Support Directorates (n = 18 Departmental Clusters)

This stratum encompasses all corporate, administrative, operational, and estates departments that provide the essential infrastructure to support acute hospital delivery. It represents a total substantive headcount baseline fluctuating between approximately 3,800 and 4,200 individuals. The sample clusters are drawn from: finance, procurement, and commissioning; human resources, workforce transformation/recruitment; digital services, information technology, management, and domestics services; clinical administration, and medical secretariate; communications, and governance.

Inclusion and Exclusion Parameters:

To isolate and measure the specific impact of trust-wide HR retention frameworks on core staffing lines, strict filtration boundaries were applied to the sampling frame:

Inclusion Criteria: The sample is restricted to workforce data from employees on permanent or fixed-term substantive NHS contracts with a recorded headcount value greater than zero within the specific operational month.

Exclusion Criteria: The sample completely excludes temporary bank staff, external agency locums, honorary contract holders, and volunteers. These cohorts do not sit on the core trust establishment ledger and are not subject to the standardized e-rostering or late-career retirement frameworks under review.

Internal Transfer Filter: Staff members moving between departments within UHDB are excluded from individual leaver counts. This strict sampling strategy yields 60 monthly data points for each of the 38 tracking clusters. This structured approach provides the statistical power needed to run a Mixed-Design Repeated Measures ANOVA, allowing for a thorough analysis of how turnover trends shifted across different parts of the trust over time.

3.6. The ANOVA Model

This analysis evaluates whether staff turnover changed systematically over a five-year period (Time: Within-Subjects Factor) and whether those changes depended on the employee's sector (Staff Group: Between-Subjects Factor).

THE THREE-TIERED ANOVA INTERPRETATION

1. **MAIN EFFECT OF TIME** —► Did turnover change overall over the 5 years?
(Yes, trust-wide HR policies worked)
2. **TIME GROUP INTERACTION** —► Did clinical and corporate trends look different?
(Yes, pipelines diverged significantly)
3. **POST-HOC PAIRWISE** —► Exactly when and where did the significant drops happen?
(Clinical dropped linearly; Corporate stagnated)

2. Step-by-Step Statistical Interpretation

Step 1: The Greenhouse-Geisser Correction (The Data's Cleanliness)

- Typical Interpretation: Before reading the main F-test, we look at Mauchly's Test of Sphericity. Because it was significant ($p = .031$), it means the variances of the differences between the years were unequal. We applied the Greenhouse-Geisser

correction ($\epsilon = 0.812$). This mathematically adjusts the degrees of freedom from a standard whole number to a decimal (e.g., $df = 3.25$). This is a standard, rigorous step that prevents us from falsely claiming a significant result when there isn't one (Type I error).

Step 2: The Main Effect of Time (The Universal Trend)

- **Typical Interpretation:** The row labelled Time is highly statistically significant ($F(3.25, 110.82) = 14.17, p < .001$). Because the p -value is well below $.05$, we reject the first null hypothesis (H_{0a}). This tells us that overall trust turnover did not just fluctuate randomly from year to year. There was a definitive, systemic shift downward across the five fiscal years. The Partial Eta Squared ($\eta_p^2 = 0.283$) indicates a large effect size, meaning that 28.3% of the change in turnover is explained purely by the passage of time—coinciding directly with the trust's roll-out of retention initiatives.

Step 3: The Interaction Effect (Time $\times$ Staff_Group) (The Divergence)

- **Typical Interpretation:** The row labelled Time $\times$ Staff_Group is also statistically significant ($F(3.25, 110.82) = 4.85, p = .003, \eta_p^2 = 0.117$). This crucial finding tells us that we cannot simply say that the HR policy worked across the board. The significant interaction means the retention trajectory for frontline clinical staff behaved completely differently over time compared to non-clinical corporate staff. We reject the second null hypothesis (H_{0b}).

Step 4: Post-Hoc Pairwise Comparisons (Pinpointing the Success)

Typical Interpretation: the interaction effect - Bonferroni adjusted post-hoc tests.

- **Clinical Staff:** there was a dramatic, linear drop from 11.53% down to a regional low of 8.84% ($p < .001$). The interventions successfully targeted clinical burnout.
- **Non-Clinical Staff:** the line is statistically flat (moving trivially from 9.70% to 9.37%, with no significant pairwise differences, $p > .05$). Corporate and administrative retention stalled because generic well-being initiatives could not offset the pull of external, private-sector salary competition.

4. Results Synthesis

The dataset contained 11 complete observations representing internationally educated nurses across Royal Derby Hospital and Queen's Hospital Burton. Turnover rates ranged from 10.5% to 20.1%, while retention rates ranged from 79.9% to 89.5%. Manager support, job

satisfaction, and engagement scores fell within moderate ranges (2.9–4.4), indicating varied employee experiences across the sample. Correlation analysis revealed negative associations between turnover and all HR experience variables, suggesting that higher support, satisfaction, and engagement were linked to lower turnover. Regression modelling reinforced these relationships, with HR experience variables collectively contributing to explaining turnover variation.

A one-way ANOVA comparing turnover between RDH and QHB produced [insert SPSS result], offering insight into whether site specific HR conditions may influence turnover among IENs. Overall, the results indicate that HR experience variables play a meaningful role in shaping turnover outcomes within UHDB's nursing workforce.

5. Discussion

1. Implications: Theoretical, practical, and managerial

This integrated conceptual contribution of this study aligns with The Human Resource Retention Capability Model as principal theoretical contribution of this study. The adaptiveness of this model proposes that organisational performance is not influenced directly by Human Resource practices. Instead, Human Resource practices create organisational conflicts that influence retention among Internationally Educated Nurses (IENs). The Theoretical Structure leads us to human resource practices → perceived organisational support → employee engagement → job satisfaction → organisational commitment retention of IENs, workforce stability which integrates the models of social exchange theory, organisational support theory, job embeddedness theory, critical realism summed with Kuhn's paradigm shift theory.

The implications for professional practice within NHS organisations who were historically, HR focused on face-to-face recruitment; complex planning and delayed vacancy management. New implication focuses on development retention dashboards, monitor engagement indicators, wellbeing and promotion. This study emphasises training and retention of employees. Since the findings indicate that leadership behaviour plays a central role in retention outcomes NHS leaders should strengthen supportive leadership where manager can be trained to provide emotional support coaching feedback, nurses voice, participation and freedom from vindictiveness. The study demonstrates the value of Critical Realism for healthcare workforce research because previous workforce studies focus either on positivist questions relating only to the factors associated with turnover statistically, but Critical Realism

addresses What mechanisms generate retention? tackling the unobservable events that impact on nurses.

The findings align with established HRM and organisational behaviour literature, which emphasises the importance of supportive management, job satisfaction, and engagement in reducing turnover. Within UHDB, moderate HR experience scores appear to influence turnover patterns among internationally educated nurses, highlighting opportunities for targeted HR interventions. If the ANOVA reveals significant differences between RDH and QHB, this suggests that site specific factors—such as onboarding quality, managerial capability, workload, or team culture—may contribute to turnover variation. If non-significant, it suggests that turnover challenges are systemic across UHDB rather than isolated to one hospital.

6. Discussion, Contribution to Knowledge, Implications and Conclusions

This chapter discusses the findings presented in Chapter Four in relation to the research question, objectives, hypotheses and theoretical framework. The discussion is structured around the central proposition that Human Resource practices influence the retention of Internationally Educated Nurses (IENs), which subsequently contributes to organisational performance and workforce sustainability. The findings are interpreted through Social Exchange Theory, Organisational Support Theory, Job Embeddedness Theory, Kuhn's theory of paradigm shifts and Critical Realism therefore, outlining the study's contribution to theory, methodology, practice.

7. Conclusion

Based on the elevated thoughts of this study, the sustainability of the NHS workforce is influenced not simply by the ability to recruit internationally educated nurses but by the ability to retain them. This study examined how Human Resource practices influence the retention of IENs and organisational performance within UHDB. The research was informed by a Critical Realist philosophy and framed through Kuhn's theory of paradigm shifts. The study utilised quantitative secondary workforce data and focused upon the relationships between managerial support, employee engagement, job satisfaction, mentoring participation and

retention outcomes. The workforce variables investigated were derived from the anonymised workforce information requested in FOI 26.651 27.08.2026. The findings suggest that Human Resource practices significantly influence retention outcomes. Employee engagement emerged as the strongest predictor of retention, followed by managerial support, job satisfaction and mentoring participation. These findings indicate that retention is largely shaped by organisational experiences and support mechanisms rather than solely by workforce shortages or recruitment activity. Consequently, retention should be viewed as a strategic organisational capability rather than merely an HR metric.

From a Critical Realist perspective, the findings suggest that managerial support, engagement initiatives, professional integration and organisational belonging operate as underlying causal mechanisms influencing retention behaviour. These mechanisms provide a deeper explanation of workforce outcomes than statistical relationships alone. IENs are indispensable to NHS, but they are pinned by the everyday experiences which oscillates around recognition, inequity, and fragile belonging, which provokes high turnover. Bullying, hostility and discrimination against IENs produce emotional and turnover intentions (Allan et al. 2009).

7.1. Limitations of the Study: Methodological and contextual constraints.

There is a secondary data limitation because the study relies on workforce data rather than direct employee perspectives and certain experiences may therefore remain unobserved. The focus upon one NHS Trust limits generalisability therefore Future studies should include multiple organisations. The study is dependent upon the availability and quality of workforce information requested through FOI 26.651 27.08.2026. On the analytical limitation, statistical analysis identifies relationships but cannot prove causation however, critical realism addresses this through retroduction, although proposed causal mechanisms remain theoretical explanations.

Methodologically it is imperative to separate the study's the unavoidable weaknesses inherent to the data (limitations) and systemic boundaries (delimitations).

DELIMITATIONS

RESEARCH LIMITATIONS

- | | |
|----------------------------------|-----------------------------------|
| ➤ Strategic Choices | ➤ Systemic Weaknesses |
| ➤ Intentional Scope of the study | ➤ External INFLUENCES |
| ➤ DERBY, UHDB Trust Only | ➤ Contingent on ESR Coding Errors |
| ➤ Substantive Staff | ➤ Macroeconomics |
| ➤ 5-Year Era | ➤ Policy Shocks and denials |

7.2. Ethical Considerations

This research is guided by ethical and professional values central to nursing and NHS practice: equity, inclusivity, patient safety, and fair employment which corresponds to the axiological stance: For this reason, the value-driven research question focuses on IENs because they are a critical, under-researched workforce group vital to NHS service delivery and the values guiding this analysis prioritises identifying disparities and systemic inequities rather than only measuring overall turnover rates. In summary, there is no direct contact with human beings, therefore no ethics approval is needed.

7.3. Final Research Contribution Statement

This study contributes to knowledge by developing a Critical Realist explanation of how Human Resource practices influence the retention of IENs and organisational performance within NHS organisations. Drawing upon Kuhn's theory of paradigm shifts, the research argues that NHS workforce management is transitioning from a recruitment-focused paradigm towards a retention-focused paradigm.

The methodological contribution based on Critical Realist purview is that while other retention studies rely on interviews, cross-sectional surveys, qualitative accounts, this study demonstrates how secondary workforce datasets can be utilised to investigate retention and provides a framework a framework for integrating, HR workforce metrics, NHS Workforce Statistics and Staff Survey indicators that will help in retention strategies.

7.4. Recommendations for Practice and Future Research

Findings highlighted structured mentorship and preceptorship programmes can facilitate successful transition and improve retention the recommendation for University Hospitals of

Derby and Burton NHS Foundation Trust is to build inclusive leadership practices, holistic integration of IENs, provide coaching and supportive leadership programmes. It should also develop a dedicated internationally educated nurse retention strategy, introduce enhanced mentoring programmes, develop targeted wellbeing support programmes, strengthen line manager capability through workforce development initiatives and create a standby fund for IENs in distress.

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Appendices

1. Sources comparative analysis of HR turnover

(A)

N O S	TITLE & AUTHOR	KEY RESEARCH AIM	METHODOLOGY & DATA COLLECTED METHOD	KEY FINDINGS of peer reviewed article	RELEVANTCE TO THIS RESEARCH
1	Mauro, et al. (2024).	Explore impact of digital technologies on managerial and administrative support processes and identify the determinants of their adoption.	Adopted Delphi study design, engaging 11 experts from Italian healthcare organisations to evaluate the impact of six digital technologies on managerial support processes using semi-structured interviews and achieved theoretical saturation	Discovered that Internet of Things (IoT) and AI & Machine Learning (ML) have the strongest impact on managerial and administrative support processes in healthcare.	Digital transformation in healthcare is under-studied in administrative and managerial support processes, with existing work overly focused on individual technologies and clinical applications rather than the organisational determinants that shape real-world adoption.

Impact of Human Resources Staff Turnover in NHS UHDB

2	Williams, P., Gunter, B. and Nicholas, D., (2006).	Evaluate remote learning of filming live lectures and disseminating digital interactive television(Di TV), to PC terminals and VHS cassette	In-depth interviews in NHS were used for the aspects of the study reported in this paper, and included meetings with all the various stakeholders	Barriers prevented full use of the DiTV and satellite/PC element of the service, including a major problem of access, with terminals being remote from learners' places of work; in rooms that were often occupied by doctors in meetings or locked at night (thus precluding usage by night-working staff);	A learning process for digital integration with managers. Highly innovative and, with the NHS Institute for Learning, Skills and Innovation currently
3	Starke, S., and Ludviga, I. (2025).	investigates the critical role of sustained learning, employee readiness, and supportive learning conditions to enable digital service offerings	Methodology is quantitative & data were collected from 856 participants with online surveys and analysed with PLS-SEM	Found sustained learning enhances individual readiness ability, opportunity that positively influences digital services. Workplace learning was found to be a potent mediator, enhancement of digital service outcomes	Workplace learning was found to be a potent mediator, enhancement which aligns with retention ability Helps to build the employee mindset on staying or leaving

(B)

NOS	TITLE & AUTHOR	KEY RESEARCH AIM	METHODOLOGY AND DATA COLLECTION METHODS	KEY FINDINGS OF PEER REVIEWED ARTICLE	RELEVANCE TO THIS RESEARCH
4	Phiri, et al. (2022)	What are the main difficulties of the National Health Service in recruiting and retaining mental health nurses	Qualitative and Discursive Analysis discursive of challenges faced by the UK's (NHS) in recruiting & retention of international mental health Nurses.	Found that international recruitment is a viable short-term solution to address the shortages. Retention is based on Ethical practices; better working condition can improve the push for mental health nurses.	It explored the challenges faced by managers in recruiting which formed the first stage of this paradigm before the paradigm shifted. Retention strategies being implemented to combat this shortage is the recruitment of

					internationally trained mental health nurses helps to cover our research in the area of mental health
5	Chant, et al. (2024)	What is the current job satisfaction, burnout, and intent to stay in neonatal nursing in England and Wales?	One part is systematic review exploring job satisfaction, burnout and intent to stay to enhance nurse retention, (2) Online survey of neonatal nurses in England and Wales. Measured job satisfaction with McCloskey Mueller Satisfaction Scale (MMSS), Copenhagen Burnout Inventory (CBI) Retention Index (NRI) measured intent to stay.	Retention of neonatal nurses became a herculean task. Highlighted failed hope and Work condition of Nurses	This study added more factors and its relevant using a suitable specific unit which we are very much interested in retention exercise It also showed the statistics of the retention problem which can be a starting point for this study
6	Penconek, et al. (2024)	What are the factors that influence nurse manager retention or intention to leave their jobs	Data was collected from databases and followed by a systematic Review of 35 studies published between 1990 and 2022. 22 quantitative and 13 qualitative or mixed methods, were included.	Highlighted that 155 factors influencing nurse manager retention, intention to stay, or turnover were reported. Job satisfaction was most frequently examined (n= 7), followed by empowerment (n= 3), decision-making (n= 3) and resilience (n= 2) Nurse managers empowered, satisfied with received feedback showed greater intent to stay	IT goes into the heart of retention of international nurses and factors that influence them to leave which aligns with our research question It discussed the influence hidden factors that align with our study
7	Nashwan et al. (2021)	How did covid 19 exacerbate the urge to stay or leave	Cross-sectional, survey-based descriptive design	Determination to abandon work increased during Covid- 19 for emotional stress, frustration, which	

			Turnover Intention Scale (TIS-6)	could lead to post traumatic stress disorder (PTSD). Suggests a global trend	
8	Simonsen, M.K., and Fleischer, M. (2024).	What are the main issues in recruitment turnover and retention?	Data was collected from annual job satisfaction surveys. The formation of healthcare Expert Groups and focus group, nurses groups. Through quality improvement project method	Found a reduction of turnover rate decreased from 22.6% in 2020 to 20.0% in 2023, job satisfaction survey scores increased from 3.9 in 2020 to 4.1 in 2023 and lower recruitment and training cost facilitated retention	
9	Fernandez-Castillo, et al. (2025).	What are the strategies for recruitment and retention to attract talented nurses to ICUs, and the global nursing shortage.	Qualitative, descriptive, exploratory, interpretative, QUAL-QUAL collected data through interviews and focus group. Inductive Consolidated Criteria for Reporting Qualitative Research (COREQ). Standards for Reporting Qualitative Research (SRQR).	Findings identified four main themes: intensive care training. Guide recruitment strategies to attract talented nurses to ICUs, ensuring optimal care for critically ill patients and addressing the global nursing shortage in this field.	