



Research Strategy

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1. Executive Summary

The Joint Committee on Surgical Training (JCST) operates within the regulatory framework defined by the General Medical Council (GMC) and the Statutory Education Bodies (SEBs). It holds a unique national responsibility where it provides strategic oversight, coordination, governance, supports quality management and improvement processes, and system management for surgical training across the United Kingdom and Ireland.

This Research Strategy aims to establish a data-driven framework to guide the JCST with making recommendations on training programme delivery, quality assurance, and assessment. This strategy aligns with:

- General Medical Council (GMC) 'Fairer Training Cultures' framework
- 'The NHS Long Term Workforce Plan' and its 10-year ambition to grow, retain, and diversify the medical workforce
- 'A Healthier Wales: Our Workforce Strategy for Health and Social Care' sets out an ambition for motivated, engaged, and a valued health and social care workforce which is competent and confident to deliver care that meets the needs for the people of Wales
- In Scotland the 'Health & Social Care Service Renewal Framework 2025-2035' aims to create positive working cultures and excellent staff wellbeing which will drive innovative solutions to improve the health and social care system.

This strategy focuses on four inter-related research priority areas:

1. National selection into surgical training
2. Outcomes of training and training programme performance
3. Differential attainment in surgical training
4. Academic surgical training

Together, these areas address access to training, experience within training, equity of training outcomes, and training programme performance. Studying these research areas will establish a body of current evidence and literature to utilise to design data-driven changes to current surgical training programmes, to support fairer training cultures, improve trainee experience and training progression, reduce academic surgery trainee attrition, reduce differential attainment in outcomes, and ensure that training programmes operate efficiently.

2. Purpose and Strategic Context

The JCST plays a central role in shaping the quality, fairness, and credibility of surgical training across the UK and Ireland. This research strategy sets out a programme of work to ensure that JCST policies are data-driven, equitable, and aligned with national regulatory and workforce priorities.

The strategy aligns with:

- General Medical Council standards and guidance, including ‘Fairer training cultures’ framework
- The NHS Long Term Workforce Plan, which outlines a 10-year vision for a sustainable, skilled, and inclusive medical workforce
- A Healthier Wales: Our Workforce Strategy for Health and Social Care’ sets out an ambition for motivated, engaged, and a valued health and social care workforce which is competent and confident to deliver care that meets the needs for the people of Wales
- Scotland’s ‘Health & Social Care Service Renewal Framework 2025-2035 aims to create positive working cultures and excellent staff wellbeing which will drive innovative solutions to improve the health and social care system

In recent years, the medical regulators have increasingly recognised that training outcomes are shaped not only by individual capability, but by organisational culture, structural design of training pathways, access to opportunity, quality of supervision, psychological safety, and fairness of assessment. **The GMC’s *Fairer Training***

Cultures programme has reframed differential attainment as system-level quality and safety issues.

Within this context, the JCST requires a coordinated national research framework to:

- Ensure national selection processes choose the best candidates in a transparent, fair, and reliable manner
- Ensure training programme design meet the needs of society and produce outputs defined by medical regulators
- Identify, define, and monitor areas of differential attainment in surgical training and produce high quality data driven evidence to support change
- Evaluate and monitor the performance of academic surgical training programmes, to ensure trainees flourish in both areas, and provide insights into targeted areas to enhance performance of these programmes

The overarching aim of the JCST research strategy is to ensure that surgical training programmes enable all trainees to thrive, and ensuring workforce sustainability, and ultimately patient safety.

3. Strategic Principles

The JCST research strategy will be guided by the following principles:

Evidence-informed (data-driven) decision-making

Policy changes will be underpinned by robust quantitative and qualitative evidence, overseen by the JCST.

Fairness and equity

Research will explicitly examine how training structures and cultures affect different groups of trainees, consistent with the GMC's emphasis on fairer training cultures.

Towards high quality data driven impactful recommendations

JCST recommendations will be based on methodologically robust evidence; supported by external researchers requesting data through the Data Analysis, Audit and Research Group) DAARG processes.

Partnerships

Research partnerships will be established to include participation from trainees, trainers, Royal Colleges, statutory education bodies, and academic partners, where fruitful collaboration is likely to lead to our strategic aims.

Programme-level perspective

Research will consider the interaction between selection, training structures, assessment practices, supervision, and output from training programmes.

4. Strategic Research Priority Areas

4.1 Priority 1: National Selection into Surgical Training

Rationale and policy context

Access to surgical training is through national selection processes. These are administered by the Medical and Dental Recruitment and Selection (MDRS) team with advice from the Specialty Advisory Committees (SAC). Selection processes must be reliable, transparent, and equitable, while identifying candidates most likely to succeed in training, contribute to the future workforce, and delivering excellent patient care. National selection processes are the principal gateway for trainees to enter surgical training and exert a significant influence on the shape, quality, diversity, and sustainability of the future surgical workforce. While national recruitment has improved process standardisation and transparency, JCST supported research from observational studies consistently demonstrates differential outcomes in recruitment by ethnicity, place of primary medical qualification, and socioeconomic background. (Seehra, 2025)

From a Fairer Training Cultures perspective, recruitment processes must be understood, not only as administrative mechanisms, but as **structural gatekeeping**

processes that shape access to specialty, belonging, confidence, and long-term career trajectories, selecting suitable candidates for that specialty to ensure long term outcomes.

The respective national NHS Long Term Workforce Plans place a particular emphasis on widening participation within surgery, improving retention of staff, and strengthening workforce supply; thus making effective and equitable selection a core workforce sustainability issue and a key equality priority.

Key Research Questions

- To what extent do current national selection tools (shortlisting and interview scores) predict progression, performance, and completion of training?
- Are there differential outcomes by ethnicity, gender, socioeconomic background, disability, and place of primary medical qualification?
- How do applicants experience selection processes, and how does this influence trust, wellbeing, and career choice?
- How do structural changes to selection and medical training, such as the medical prioritisation bill, affect applicants and trainees?

Research Approaches

- Longitudinal linkage of selection data obtained from MDRS with ARCP outcomes, exam performance, training achievement metrics, and attrition obtained through DAARG from the Intercollegiate Surgical Curriculum Programme (ISCP), eLogbook, and partner organisations such as the MDRS
- Psychometric and equality impact evaluation of selection tools.
- Qualitative evaluation of applicant experience and perceptions of fairness and stratified by protected demographics.
- Evaluation of alternative or enhanced selection methodologies through collaborating with external organisations across different high performance disciplines including science and elite sport.

Intended Impact

- Refinement of selection processes to support fairness and predictive validity.
- Clear evidence to support defensible recruitment decisions.
- Alignment with GMC expectations for equitable access to training.

What JCST needs to understand

The JCST needs to be able to answer key system-level questions such as:

1. Selection validity and trainee progression

- Do current selection tools predict ARCP outcomes, exam success, training achievement metrics, completion of training, and how long it takes to achieve CCT requirements?
- Which components of selection (shortlisting and interview scores) contribute most strongly to later performance?

2. Differential outcomes

- Where do differential recruitment outcomes exist by protected and contextual characteristics?
- Are these disparities associated with later training outcomes?

3. Candidate experience and retention

- How do candidates experience national selection processes?
- How does perceived fairness influence wellbeing, attrition, and long-term career commitment?

4.2 Priority 2: Outcomes of Training and Training System

Performance

Rationale

The Annual Review of Competence Progression (ARCP) process provides a structured set of outcomes that enable monitoring of progression and determining of

completion of training. The definitions and coding framework are set out in the Gold Guide and related national ARCP guidance. Outcome 1 (Op1) and 6 (Op6) indicate satisfactory progress and completion of training, respectively. Outcomes 2 (Op2) and 3 (Op3) indicate non-standard outcomes, indicating the requirement of additional training needs (Op2) with additional training time (Op3) and Outcome 4 indicates release from the training programme. Outcomes 3 and 4 are potentially associated with a significant detrimental psychological impact on trainees and an economic impact on NHS employers.

Whilst training is competency/outcomes based, failure to complete within indicative timeframes reduces the throughput of trained CCT holders and has a significant financial impact on health economies. It may be useful to treat serial ARCP outcome 1s and an Outcome 6 as a “textbook” endpoint (training completed to time and standard). While recognising that many non-textbook outcomes may still reflect safe and appropriate training outcomes, not achieving completion of training within projected timeframes raise important questions:

- are training capacities sufficient?
- do trainees have equitable access to operative experience and supervision?
- are assessment systems functioning as intended?
- are there avoidable delays creating workforce loss and cost?

This is strongly aligned with regulatory emphasis on learning environments and organisational accountability, including the GMC’s focus on workplace experience and training quality.

Key Research Questions

- To what extent do current training programmes meet the ‘textbook outcome’ benchmark and what are the financial implications of extending training?
- Are there differential outcomes by ethnicity, gender, socioeconomic background, disability, and place of primary medical qualification?
- What is the prevalence of Less Than Full Time (LTFT) training and how does this impact on training outcome measures?

- Are current return to training programmes sufficient to negate the reduction in technical surgical competencies

Research Approaches

- Longitudinal assessment of training data from ISCP with ARCP outcomes, exam performance, and training achievement metrics, supported by the DAARG process.
- Qualitative evaluation of trainee experience and perceptions of fairness stratified by protected demographics.

Intended Impact

- Identify areas that support refinement of training processes to improve training and support fairness.

What JCST needs to understand

The JCST needs to be able to answer key system-level questions such as:

1. Progression and ‘training flow’

- What proportion of trainees progress through training with serial Outcome 1s across training years prior to outcome 6?
- What are the common alternative trajectories (eg, Outcome 2, 3, 4), and where/when in training do these occur?

2. Training time and flexibility

- How many trainees train Less Than Full Time (LTFT), and in which specialties, regions, and demographic groups?
- How does LTFT interact with progression, operative exposure, exams, and achieving CCT requirements?

3. Non-standard outcomes and unwarranted variation

How frequently do trainees receive non-standard outcomes and what is the distribution by:

- Specialty
- Region/deanery
- Training site
- Protected characteristics and contextual factors

4. Training efficiency and cost

- What is the cost implication of delayed progression (to include but not limited to additional training time, rota gaps, locum spend, supervision burden, exam resits, and the opportunity cost of delayed consultant workforce contribution?)
- What proportion of delay is explained by:
 - service pressure and rota gaps
 - insufficient training opportunities (theatre access, clinics, endoscopy lists etc)
 - assessment/portfolio process non-compliance
 - exam capacity and timing
 - supervision variability
 - cultural factors (including belonging and psychological safety)

5. Are surgical specialties achieving 'textbook outcomes' as expected?

- For each specialty, what proportion of cohorts reach Outcome 6 within the indicative timeframe (allowing for appropriate adjustment for LTFT and OOPE/OOPR)?
- Where trainees do not, what are the principal causes?

4.3 Priority 3: Differential Attainment in Surgical Training

Rationale

Differential attainment represents a systemic challenge with implications for fairness, workforce morale, and patient care. Surgery requires a specialty-specific understanding of the drivers of differential outcomes. Differential attainment is recognised by the GMC as a marker of training system quality and organisational culture. In surgery, high-pressure environments and variability in supervision and assessment practices may amplify differential outcomes. Persistent disparities in ARCP outcomes, examination performance, and progression affect ethnic minority trainees, international medical graduates and those from lower socioeconomic backgrounds. Differential attainment represents programme-level risks to fairness, morale, and workforce retention. **The determinants of differential attainment remain unknown, with the educational literature frequently presenting training outcomes and associations rather than underlying causes.**

Key Research Questions

- What individual, organisational, and structural factors contribute to differential attainment in surgical training?
- How do training environments, assessment practices, and supervision influence outcomes?
- Which interventions will be effective in narrowing attainment gaps?

Research Approaches

- Quantitative analyses of ARCP outcomes, exam results, training achievement metrics, and progression using trainee protected characteristics routinely recorded in the ISCP.
- Qualitative analysis of trainee lived experience, belonging, and psychological safety of training delivery and assessments.
- Longitudinal assessment of changes in selection and examination to identify intervention that effect differential attainment.

Intended Impact

- A clear data-driven evidence base to inform JCST policy and guidance.

- Practical recommendations to support the GMC fairer training cultures initiative.
- Improved trainee experience, progression, and retention.

What JCST needs to understand

- Where do differential outcomes exist across surgical specialties and regions?
- Which organisational and cultural factors predict poor training outcomes?
- How do belonging, supervision, psychological safety and assessment practice interact with attainment?

4.4 Priority 4: Academic Surgical Training

Rationale

Academic surgeons are essential to innovation, service improvement, and leadership. Academic training pathways can be fragmented and disproportionately challenging for some specialty groups. Academic surgeons are essential to innovation, clinical research leadership and service improvement. **National NIHR and university workforce data demonstrate that surgery is consistently under-represented in university-appointed clinical academic posts compared with other specialties.**

There is marked attrition across the academic career pipeline, particularly between Academic Foundation (AF), Academic Clinical Fellow (ACF), Academic Clinical Lecturer (ACL) and Senior Lecturer appointments made following completion of training. (add Jon Lund paper here) Surgical trainees are significantly less likely than medical trainees to progress to senior academic appointments.

Programme-level contributors to attrition include high service pressures, misalignment between training and academic milestones, reduced access to protected academic time, and disproportionate impact on women, international graduates, and less-well-represented groups.

This represents not only an equity issue, but a strategic workforce risk to the sustainability of surgical research leadership.

Key Research Questions

- What are the career trajectories and outcomes of academic (NTN(A)) surgical trainees?
- What barriers exist to entry, progression, and retention in academic surgery?
- How do training structures, assessment processes, and service pressures affect academic productivity and wellbeing?

Research Approaches

- National cohort studies of integrated academic clinical training (ACFs, and ACLs) in surgery, relating to training progression, academic and clinical achievements, and transition to higher clinical academic appointments.
- Qualitative studies with trainees, supervisors, and training programme directors evaluating mentorship, protected research time, and flexible training models.

Intended Impact

- Evidence-based recommendations to strengthen academic surgical training pathways including assessment and training quality benchmarking.
- Improved inclusivity and sustainability of academic surgery.
- Better alignment between service delivery, training, and research capacity between NHS Trusts and Universities.

What JCST needs to understand

- What proportion of surgical academic trainee's progress through the clinical academic training phases (ACF → ACL → Senior Lecturer)?
- Where does the greatest attrition of trainee progression occur?
- What is the optimum clinical academic training programme setup for trainee achievements and progression
- How do service pressures, rota design, supervision and mentorship affect academic productivity?
- How do protected characteristics and LTFT training intersect with academic achievement and progression?

Translating evidence into strategy and action

This priority area creates a platform for JCST to move from description of an issue to constructing potential solutions. Findings should feed into:

- JCST guidance
- Quality management discussions with employers and regional bodies
- ARCP panel development, diversity, and fairer training cultures
- Interventions targeted at modifiable features of training processes that will lead to better training

5. Infrastructure and Collaborations

To deliver this research strategy, the JCST will:

- Support access to linked national datasets across recruitment, training, and assessment through collaborations with ISCP, eLogbook, and MDRS; establishing JCST research fellows who will work closely with the Research Lead and DAARG.
- Support trainee involvement, through collaboration with trainee associations, in research design and delivery.
- Continue stringent data governance and ethical oversight through DAARG and oversight.
- Align research outputs with GMC and Government quality assurance processes and workforce planning priorities.

6. References

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