Association of Surgeons in Training

State of Surgical Training

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Report submitted on behalf of:

Association of Surgeons in Training (ASiT)
Association of Otolaryngologists in Training (AOT)
British Neurosurgical Trainees Association (BNTA)
British Orthopaedics Trainee Association (BOTA)
BAUS Section of Trainees (BSoT)
Duke's Club
The Herrick Society
The Mammary Fold
The Moynihan Academy (MA)
Oral and Maxillofacial Surgery Fellows in Training (OMFS FiT)
Plastic Surgery Trainees Association (PLASTA)
Roux Group
Rouleaux Club
National Trainee Committee for Cardiothoracic Surgery (NTCCTS)
Trainees in Paediatric Surgery (TriPS)

ASiT

ASiT's key asks for the Future of Surgical Training

- Expand training capacity to end bottlenecks.
- Fix national recruitment and restore fairness.
- Protect operative training time across all surgical settings.
- Stamp out discrimination and misconduct with real accountability.
- Make training financially fair by funding essential costs.
- Guarantee true flexibility with universal LTFT access.
- Modernise training with investment in educators and equitable access to academic, leadership, innovation, and global surgery pathways.

Contents

Executive Summary

ASiT and SSTOs State of Surgical Training present a comprehensive analysis of postgraduate surgical training in the UK, evaluating its alignment with patient needs, healthcare service demands, and the expectations of trainee doctors.

Key Findings:

01 Training Bottlenecks:

- Surgical training remains highly competitive, with bottlenecks evident at all stages of progression.
- The development of a national workforce planning initiative is crucial to ensuring prompt resolution of these bottlenecks.

02 Loss of operative opportunities:

- Trainees report significant barriers to acquiring hands-on experience due to service demands, rota gaps and a loss of elective cases to surgical hubs and the independent sector.
- Contractual trainee access to hubs/ independent sector and a 'Training GIRFT' are proposed to enhance access and standardize the quality of training across the UK.

03 Deprofessionalisation of surgical trainees:

- Consistent deprofessionalisation, the cost (financial and non-financial) of surgical training all significantly impact burnout rates and morale of surgical trainees.
- Resolution of persistent issues with surgical training, minimising costs of surgical training and self-rostering mechanisms are all proposals to tackle burnout rates and low morale.
- Urgent reform of recruitment mechanisms that are fair, valid and secure.

04 Equality, Diversity, Inclusion & Culture

- Sexual misconduct remains widely reported within surgical environments and requires urgent cultural and structural action.
- Persistent gender and racial disparities in surgical training pathways were identified, with challenges in recruitment and assessment outcomes for minority groups.
- Recommendations include standardising assessment protocols, improving mentorship, and fostering inclusive, safe learning environments.

05 Improving Flexibility in Training:

- Calls for improved Less Than Full-Time (LTFT) pathways and flexible curricula to access portfolio pathways to support work-life balance, particularly for parents and underrepresented groups.

Conclusion:

The report advocates for a **nationally coherent training pathway** that aligns surgical education with population health needs, ensuring equitable distribution of trainees, enhanced training quality, and digital readiness. Strategic investment in educator capacity, innovative training hubs, and flexible learning models is critical to meeting future workforce demands and improving trainee experience. Over £334 million is invested by the government per year into surgical training – representing a significant mismatch between funding and function, requiring urgent overhaul to increase accountability and purpose.

Foreword

Surgical training in the UK has faced significant change since the inception of the current postgraduate model of national training. Significant changes in healthcare policy but also the changing health profiles of the patients we treat require a fundamental shift in how surgical training is delivered in the UK.

Currently, trainees are demoralised, deprofessionalised and disincentivised. Successive GMC surveys show declining morale and census data shows a lack of access to training opportunities. We welcome the postgraduate Medical Training Review and advocate for solutions focussed on the individual needs of craft specialties whilst recognising the significant strain the NHS is facing currently.

As we compiled this report, what was stark to see was how much evidence already exists for the implementation of innovative solutions to resolve persistent training issues. Some of these calls of action happened over a decade ago and yet unfortunately we find ourselves in a similar situation today. A collaborative and united strategy is needed to ensure all aspects of surgical training are tackled consistently.

The recent publication of the diagnostic phase of the Medical Training Review by NHS England provides a timely and significant opportunity to reshape the future of surgical training in the UK. We now have a clear and evidence-based blueprint to guide meaningful reform. It is vital that we seize this moment to enact lasting, positive change for surgical trainees at every stage of training, recognising that improved training environments ultimately translate into better care and outcomes for our patients.

What started off as a submission to the Medical Training Review has evolved into a pan-specialty, pan-grade recognition of challenges faced by our profession. Within this report we aim to highlight the key challenges facing all surgical specialties and suggest some proactive solutions that aim to prioritise the needs of trainees whilst still sticking to the principles of delivering excellent patient care. Throughout the report, we have adhered to ASiT's principles of the pursuit of excellence in surgical training. Surgical training is at a key crossroads - there needs to be a fundamental shift in how we approach training, with greater accountability and a clear coordinated strategy to divert resources where we need them the most.

In preparing this report, our aim was to present the trainee perspective across the breadth of surgical specialties and training grades. I am deeply grateful to my colleagues on the ASiT Executive and Council, and to our partners across the Surgical Specialty Training Organisations. Their ongoing dedication to championing the needs, experiences, and professional development of surgical trainees and students throughout the UK and Ireland is invaluable. This report is a testament to their continued commitment to ensuring that the surgical workforce of the future is supported, skilled, and empowered to deliver the highest standard of care.

Raiyyan Aftab
President
Association of Surgeons in Training

ASiT

1. State of Surgical Training: Current Challenges

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1.1 Workforce planning – the need for change

1.2 The Trainee Experience

1.3 Recruitment and Career Progression

1.4 Culture and Inclusion

1.5 Building a fit-for-future training pathway

1.6 Valuing the Educator Workforce

1.1 Workforce planning – the need for change

The unequal distribution of the medical workforce across the UK remains a significant and persistent challenge, particularly within surgical training. Existing literature increasingly highlights the tension between doctors having autonomy in shaping their career paths - selecting where they live, work, and train - and the limitations imposed by inflexible workforce structures and historical training post allocations. This is a key theme identified by the Medical Training Review's (MTR's) listening exercise into what needs to change with postgraduate training. The current distribution of medical training posts has evolved largely from legacy arrangements rather than being driven by contemporary healthcare demands or projected future population health needs. As a result, there is a clear misalignment between where training opportunities are concentrated and where clinical workforce shortages are most acute.

This disconnect is particularly evident in rural, coastal, and deprived areas, which often struggle to attract and retain surgical trainees. These regions frequently experience higher rota vacancy rates, which leads to disproportionate workloads for the resident workforce and reduced opportunities for educational supervision. Competitive national recruitment processes further exacerbate this disparity: more desirable urban or academic centres attract large numbers of applicants, while less popular posts remain chronically underfilled.

This maldistribution has broader implications not only for training quality but also for patient care, health equity, and long-term workforce sustainability. A strategic, needs-based redistribution of training posts, guided by real-time workforce data and regional service gaps is essential to rebalance opportunity, ensure training equity, and deliver safe, high-quality surgical services across all regions of the UK.

1.1.1 Training bottlenecks

Over 2019 - 2025, surgical training in the UK became much more competitive, as evidenced by the rising competition ratios for both core surgical training and higher surgical specialties. Core Surgical Training now routinely has over 5 applicants per post - numbers unheard of a few years ago[1].

This escalation has occurred despite a recognised shortage of doctors in the NHS, highlighting a misalignment between workforce supply and training capacity[2].

The number of training posts has remained nearly static or grown only marginally, failing to keep pace with increasing numbers of applicants.

> ***The latest cycle shows application ratios exceeding 8 applicants per post.***

Contributing factors include:

Insufficient workforce planning (and funding) for training expansion.

Policy changes that opened the doors to more international applicants.

Increasing numbers of UK graduates, and reductions in alternative job opportunities that push more doctors into the application pool.

The above represents a perfect storm of increased medical school places (without a subsequent increase in training infrastructure for postgraduate resident doctors), increasing competition from international applicants and an ever-growing pool of unsuccessful applicants who will apply in subsequent rounds of recruitment, further compounding training bottlenecks. These bottlenecks are present at all stages of training and are particularly highlighted in neurosurgery and cardiothoracics, with the output of the training pathway not representative of consultant vacancies. Additionally, the expansion of portfolio pathway routes to CCT[3] presents an additional pressure on limited training opportunities, limited exam allocations and limited consultant jobs. All parts of the pathway need oversight to ensure that bottlenecks are not shifted earlier or later in trainee careers.

1.1.2 Distribution of trainees

There is a current imbalance in the distribution of medical trainees across regions and specialties, which is contributing to workforce gaps in certain areas.

> ***Rural and economically deprived regions, in particular, struggle to fill training posts, leading to rota gaps and increased workloads for existing trainees[4]***

Historically, geographical distribution of training places has been concentrated in larger teaching hospitals. In response, the NHS Long Term Workforce Plan proposes to “level up” underserved regions by expanding medical school places in areas where shortages are most acute, with new places expected to be available from September 2025[5].

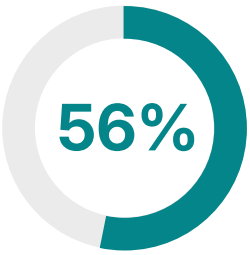
There is also a heavy reliance on international medical graduates (IMGs) in some regions, which highlights underlying issues in how trainees are distributed locally. Notably, over two-thirds of joiners were non-UK graduates, up from just under half in 2017[6].

Compounding the problem is an aging consultant cohort; for instance, 64% of surgeons aged 55 - 64 plan to retire by 2029, which could exacerbate the shortfall in trained professionals[7].

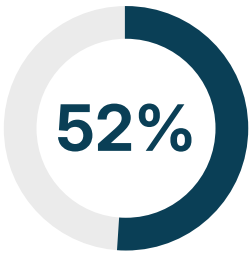
Posts in urban centres remain significantly more competitive, leading to uneven service coverage for patients. This maldistribution also negatively impacts trainee experience.

In understaffed hospitals, trainees often bear a disproportionate service load due to fewer colleagues sharing duties. This not only increases pressure but also compromises the amount of time available for actual training[4].

Rota gaps in less urban centres have a direct and detrimental effect on the quality of training. This, in turn, impacts retention metrics and perpetuates a vicious cycle of under-resourcing and poor training experience. A significant number of trainees report insufficient access to critical training opportunities:



56% of surgeons have identified a lack of access to operating theatres



52% of trainees reported inadequate time for training due to excessive service demands[7].

This imbalance between service demands and training time is particularly pronounced in hard-to-staff hospitals. Around 25 - 26% of all trainees state that their training is adversely affected by rota gaps[4]. Furthermore, 41% of surgical trainers feel that trainee education is compromised due to unresolved rota issues[4]. Systemic pressures are also taking a toll on the workforce more broadly, with 47% of all surgical staff reporting that these pressures impair their ability to perform their jobs effectively[7]. Hard to staff rotas, worsened service provision to training ratios and poor retention all negatively impact on the training experience and the variations in regional distribution directly impact trainees.

1.2 The Trainee Experience

A growing body of literature, alongside direct feedback from trainees through listening events, underscores the pressing challenges surrounding trainee wellbeing and morale in the current system. The MTR's listening exercise highlights the persistent loss of morale across all specialties irrespective of grade. Despite ongoing efforts to improve the training experience, a consistently high proportion of doctors in training continue to report elevated levels of stress, anxiety, and burnout. Data from the General Medical Council's (GMC) National Training Survey has persistently shown that a significant number of trainees are at moderate to high risk of burnout - highlighting the systemic nature of this issue.

Interestingly, while overall satisfaction with the quality of teaching remains relatively strong - with 78% of trainees rating it positively - and 70% of respondents indicating they feel supported in their training environments, this surface-level satisfaction belies deeper issues. Many trainees report feeling overworked, undervalued, and professionally isolated, particularly within hyper-rotational training structures that limit continuity, stability, and meaningful integration into clinical teams. The emotional toll of moving frequently between unfamiliar hospitals and geographical regions often compounds stress and reduces access to consistent support networks.

One of the most cited stressors among trainees is the intense competition for higher training posts, lack of certainty and control over one's future. This perpetuates a sense of anxiety and disillusionment particularly marked for those in the early stages of training. With spiralling competition ratios and limited expansion of jobs, this leads to a high-stakes environment, where even highly capable candidates may fail to progress due to marginal scoring differences or logistical inconsistencies in application processes.

Additional contributing factors to declining morale include excessive clinical workload, insufficient access to high-quality educational supervision, and limited availability of pastoral support services. These challenges are compounded by the hidden and often prohibitive financial costs associated with surgical training. Expenses for mandatory examinations, preparatory courses, portfolio platforms, professional memberships, and conferences place a considerable financial burden on trainees, many of whom are already managing substantial student debt. These cumulative costs, many of which are only partially reimbursed or not covered at all by study budgets, disproportionately affect trainees from less privileged socioeconomic backgrounds, thereby raising concerns about equity, accessibility, and retention.

Together, these findings highlight the urgent need for structural reforms that address not only the quality of teaching and supervision, but also the broader psychological, financial, and professional pressures that shape the day-to-day experiences of surgical trainees. Ensuring a more humane, supportive, and sustainable training environment will be essential to improving morale and safeguarding the long-term health of the surgical workforce.

1.2.1 Cost of Surgical Training

The 2024 ASiT Non-Financial Cost of Surgical Training report provides a comprehensive analysis of the challenges faced by surgical trainees in the UK. Based on responses from 459 surgical trainees, the report highlights significant concerns regarding physical and mental health, work-life balance, and overall well being[8].

1.2.2 Physical and Mental Health Impacts

- Physical Health:

> ***Approximately 76.8% of trainees reported that surgical training negatively impacted their physical health.***

- Common issues included musculoskeletal problems, exhaustion, poor diet, and lack of exercise.

- Notably, 22.2% sought non-pharmacological treatment, 11.6% required pharmacological intervention, and 18.1% took sick leave due to training-related physical health issues[8].

- Mental Health:

> ***A significant 84.3% of respondents indicated that surgical training adversely affected their mental health.***

- Factors contributing to this included burnout, stress from job responsibilities, training demands, and the recruitment process.

- Consequently, 25% sought non-pharmacological treatment, 9.1% required pharmacological support, and 23.3% took sick leave for mental health reasons[8].

1.2.3 Impact on Personal Relationships and Life Events

The demanding nature of surgical training also affected trainees' personal lives[8]:

- Relationships: A majority reported negative impacts on their romantic relationships (81.5%), family relationships (77.0%), and friendships (82.0%).

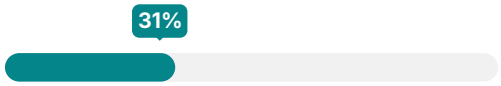
- Missed Events: Due to clinical commitments, 89.3% missed important family events, while 62.2% missed events related to career progression.

1.2.4 Impact on Parenthood

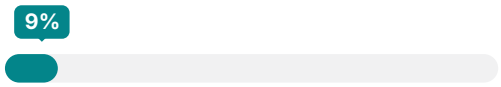
The considerable impact of training, specifically in surgery has been understated and there currently exist few mechanisms that recognise these challenges and provide support to trainees becoming parents. A BJS publication has highlighted the stark realities[9]:

Delayed parenthood: A significant proportion of trainees postponed parenthood due to training demands with 56% of childbearing and 40% of non-childbearing trainees reporting delaying having children.

Pregnancy Complications: Among childbearing trainees,



31% experienced major pregnancy complications,



a rate notably higher than the 9% observed in the general population.

Workload During Pregnancy: Over 70% of childbearing trainees continued to work night shifts or more than 40 hours per week during pregnancy, potentially contributing to the higher complication rates.

Parental Leave Disparities: While childbearing trainees took an average of 10.2 months of parental leave, non-childbearing trainees averaged only 2 weeks, with two-thirds feeling this duration was insufficient.

Breastfeeding Challenges: Approximately 61% of trainees who breastfed reported inadequate workplace provisions to support breastfeeding upon returning to work.

1.2.5 Consideration of Career Changes

Alarmingly, half of the trainees surveyed considered practicing in another country due to the non-financial burdens of surgical training. This trend was more pronounced among junior trainees[8].

1.2.6 Deprofessionalisation of Trainees

There are various elements of surgical training which our survey has shown contribute to poor morale. A significant portion of the decline in morale stems from the ongoing deprofessionalisation of the workforce, which leads to reduced autonomy and diminished control over their own training experiences. This erosion of professional independence undermines trainees' sense of purpose and growth, contributing to frustration and disengagement. Contributing factors to this include:

- Inconsistent recruitment processes accompanied by administrative errors
  - Repeated issues with rankings, preferencing, and the release of offers
  - Failure to consistently meet pre-established deadlines
  - Shifting expectations and requirements with minimal communication to candidates
- Trainees not being recognised on pay-scales for past clinical experience, particularly those in Oral and Maxillofacial Surgery and those undertaking post-CCT fellowships.
- Hyper-rotational training models with inefficient HR paperwork transfers
  - Insufficient induction processes for new placements
  - Significant administrative burdens during transfers between trusts
  - Problems with payslip administration
  - Limited autonomy over rotation choice and location
- Inadequate compensation for hours worked, particularly for those exceeding rostered shifts.

1.2.7 Flexibility in Surgical Training

The call for greater flexibility in postgraduate medical education, particularly within surgery is increasingly recognised as a critical factor in supporting trainee wellbeing, improving retention, and modernising the workforce. Across the surgical community, doctors are expressing a desire for more autonomy over their professional development, the ability to balance career with personal and family responsibilities, and the opportunity to engage in meaningful activity beyond traditional clinical roles.

Surgery, as a craft specialty, requires trainees to learn hands-on skills that are often acquired in specific centres. Despite this, the current training structure remains rigid, with most trainees progressing through prescribed full-time pathways. Flexibility for part-time training or alternative career paths is generally limited to exceptional circumstances. This inflexibility has disproportionately impacted those with parenting or health-related commitments, and has been repeatedly cited as a barrier[10,11].

In surgery, flexibility must extend beyond mere working hours. It includes rethinking how trainees progress through training, how competencies are acquired and assessed, and how individual career aspirations, such as academia, medical education, leadership and management, innovation and global health can be accommodated without penalty.

> ***For many, the ability to shape a personalised training journey is no longer a preference but a necessity, particularly for those managing parenthood, chronic health conditions, or caring responsibilities***

There are existing mechanisms intended to offer flexibility, such as Less Than Full Time (LTFT) training, time out of programme (OOP) for research, education, or experience, and training pauses with competency-based re-entry. However, in practice, access to these pathways remains inconsistent and often bureaucratically burdensome. Many surgical trainees report a lack of clarity about the application processes, delayed approvals from local education providers, and variable cultural

acceptance of these choices within surgical departments. In some cases, LTFT trainees face implicit bias, including reduced access to operative opportunities or assumptions about their long-term commitment to the specialty.

Data from HEE's LTFT Category 3 pilot indicates that flexibility can be a powerful retention tool. The survey found that 100% of participants felt LTFT training improved their work-life balance and overall wellbeing[12].

Importantly, 93% of those surveyed agreed that it made them more likely to remain in training, underlining the impact of such policies on retention[12]

Moreover, demand for part-time options remains high. Among trainees not currently undertaking LTFT training, 86% expressed interest in doing so, most commonly at 80% of full-time hours (equivalent to four days per week)[12].

The attrition of women from surgical training has been strongly linked to this lack of flexibility. While 42% of surgical trainees are female, only 25% of consultant surgeons are women[7]. Contributing factors include the lack of formal part-time training options and persistent negative attitudes toward flexibility in surgical careers[13]. These attitudes impact anyone for whom a flexible career pathway would allow them to successfully pursue and complete surgical training.

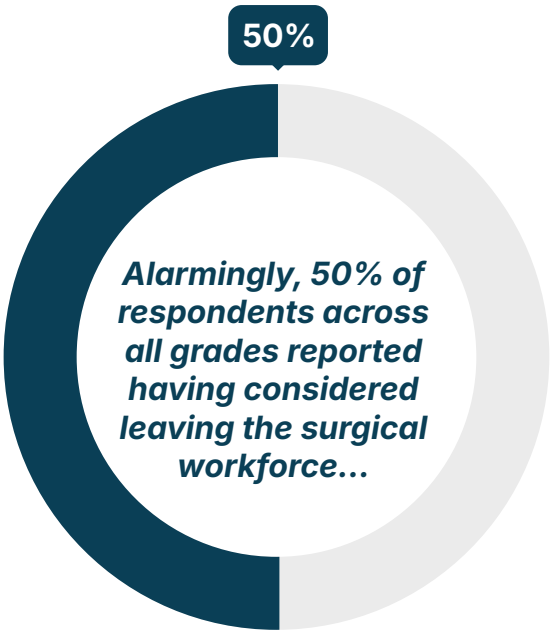
Current training structures are still largely time-bound and rotation-driven which struggle to accommodate the dynamic and non-linear nature of modern careers. Trainees with aspirations beyond the operating theatre often find themselves forced to choose between surgical training and their broader interests, rather than being supported to integrate both into a coherent and enriching career path. This rigidity disproportionately impacts those with parental responsibilities, carers, and those from underrepresented backgrounds, and is a known driver of attrition from surgery.

1.2.8 Burnout and Morale in the Surgical Workforce

Our findings regarding the ASiT Non-financial Cost of Training are unfortunately supported across a variety of forums. Burnout and low morale remain pervasive issues within the surgical profession. According to recent data, two-thirds of residents are at moderate or high risk of burnout, underscoring the widespread nature of the problem[4].

Surgical trainees have reported a steady decline in well-being. Surveys conducted over the past decade indicate a worsening trend in overall satisfaction across most surgical specialties, highlighting the long-term erosion of morale in the training environment[14].

In the broader surgical workforce, 61% of all surgeons identify burnout and stress due to excessive workloads as major challenges in their roles[7].



...within the previous year, a stark indicator of declining morale[7].

Work-life balance is also a significant concern. A substantial 67% of consultant surgeons frequently work beyond their contracted hours, and 42% did not take their full annual leave in the past year[7].

1.2.9 Financial Cost of Surgical Training

The financial burden of surgical training in the UK presents a serious challenge for aspiring surgeons, particularly considering increasing NHS pressures, prolonged training pathways, and rising student debt. Medical graduates now face average debts of £50,000 - £90,000, with some exceeding £100,000, exacerbated by interest rates of up to 6.9% - a significant jump from a decade ago[15]. These financial pressures, along with unresolved issues around pay and working conditions, have driven national strike action and contributed to worsening morale. Beyond student loans, surgical trainees incur substantial additional costs from exams, courses, conferences, and professional memberships. Studies have shown that these costs are not only higher for surgical trainees than their medical or anaesthetic counterparts, but also often go unreimbursed due to limited study budgets[16].

Interim analysis of ongoing work by ASiT on the financial cost of achieving a CCT in a surgical specialty shows the following:

> ***Total Cost for CCT (assuming no years out): £26423 (up to 29.6% can be reclaimed via study budget)***

- Mandatory Cost for CCT (no refund via study budget): £12833
- Royal College Subscription + BMA Subscription + Specialty Association Subscription across training (no refund via study budget): £5762
- Total average cost of courses/ other activities for progression/ NTN application: £7828

This growing financial strain has implications for equity, accessibility, and retention within the surgical workforce. Trainees from less privileged backgrounds are disproportionately disadvantaged, especially when essential courses like

BSS, ATLS, and CCrISP are not financially supported by employing trusts despite being critical for progression. Study budgets require that trainees initially meet the cost upfront, before being reimbursed later. The high cost of these courses can sometimes leave trainees out of pockets for months prior to reimbursement. The disconnect between what is deemed necessary for career advancement and what is eligible for reimbursement perpetuates inequality. If the profession is to remain diverse and representative of the population it serves, urgent systemic reform is needed to reduce hidden costs and ensure fair access to training opportunities for all.

1.2.10 Culture of Surgery

The 2023 GMC National Training Survey highlights trends in the working conditions faced by junior doctors, particularly those in the early stages of training such as Foundation Year doctors. These trainees report experiencing significantly more negative behaviours than their senior counterparts[4].

Specifically, one in five foundation trainees reported being unjustly blamed for problems, double the rate observed among more senior trainees.

In addition, the survey revealed that more than 1 in 10 trainees have felt "intentionally humiliated" during their training.

Alarmingly, 27% of all trainees reported experiencing micro-aggressions or harsh language from colleagues[4].

Within surgery, there are multiple examples of the ongoing need to change the culture experienced by medical students and resident doctors in surgery. The culture within UK surgical training has been critically examined for perpetuating a "hidden curriculum" an informal set of norms and behaviours that often undermine formal educational objectives. This hidden curriculum has been associated with practices such as "teaching by humiliation," where trainees experience belittlement or public embarrassment, leading to psychological distress and potential burnout.

Sexism remains a significant issue in surgical environments. Female medical students frequently encounter gender bias, including microaggressions and discriminatory remarks, which can deter them from pursuing surgical careers[17]. The scarcity of female role models in surgery further exacerbates this issue, reinforcing the perception that surgery is a male-dominated field.

Additionally, the hidden curriculum contributes to unequal access to opportunities for minority groups. Students from underrepresented backgrounds often lack the informal networks and mentorship opportunities that contribute to surgical career advancement[18,19]. This systemic bias can lead to feelings of exclusion and hinder the professional development of minority trainees.

1.3 Recruitment and Career Progression

1.3.1 Recruitment Issues and the advent of Artificial intelligence

A key source of frustration and declining morale among trainees is the inconsistency and lack of transparency within recruitment processes. Trainees have repeatedly reported administrative errors that undermine confidence in the system and disrupt career progression. These include persistent issues with the accuracy of applicant rankings, difficulties with preferencing systems, and errors or delays in the release of job offers. Additionally, recruitment bodies frequently fail to meet pre-established deadlines, leaving trainees in prolonged periods of uncertainty. The situation is further complicated by shifting expectations and evolving requirements, often communicated poorly or at short notice. This lack of clarity and consistency not only increases stress but also erodes trust in the fairness and reliability of the recruitment process.

Below, we have catalogued and highlighted issues found during national recruitment since 2019 (excluding COVID years):

Year	Issue Type	Specialty/Area	Incident Summary
2019	Timeline delays (missed deadlines)	Multiple specialties	Widespread delays in recruitment timelines, including interview invites and offer releases. No major single error reported, but minor issues occurred.
2021	Data error → incorrect rankings/offers	Anaesthetics (CT1 & ST3)	Excel errors in score entry led to wrong rankings for ST3 applicants. Offers had to be retracted and reissued; some incorrect offers were honored to mitigate harm.
2021	Shortlisting error (score cutoff)	Obstetrics & Gynaecology ST1	Shortlisting mistake initially left some qualified O&G applicants without interview invites. Later, they received late invites to interview when the error was recognized.
2022	Rule change after applications	Core Surgical Training	CST 2023-cycle change: Applicants were told after applying that they must take the MSRA exam, a requirement added only months before interviews. This sudden change caused confusion and extra burden mid-cycle.
2022	Scoring formula error → re-rank	Geriatric Medicine ST4	Ranking calculation error (a scoring multiplier applied twice) produced an incorrect merit list. All ranks and offers had to be retracted and redone, delaying the ST4 process for geriatrics.

Year	Issue Type	Specialty/Area	Incident Summary
2023	Scoring error → delayed offers	Internal Medicine Training	Tie-breaker error in IMT scoring caused a delay in releasing offers. Applicants had to wait beyond the expected date while scores were recomputed correctly.
2023	Offer timing mistake (early release)	General Surgery ST3	Offers released too early: General Surgery ST3 offers came out ~5 days ahead of schedule by mistake. The premature notifications were an error, leading to confusion until the official date.
2023 - 2024	Rankings error → offers retracted	Radiology ST1	A ranking error meant initial offers were wrong. All radiology offers were retracted and reissued with correct rankings, which in turn delayed other specialties' offers nationally.
2024	System glitch (booking dates)	Internal Medicine Training	IMT interview scheduling opened unintentionally early and filled up, forcing a reset of all bookings and a restart at the proper time.
2024	Result delay (missed deadline)	Multi-specialty (MSRA exam)	Candidates did not receive their MSRA results until a week after the expected date, affecting their specialty preferencing and causing significant anxiety.
2024	Allocation shortfall (delay in placement)	Foundation Programme (FY1)	An expanded cohort of graduates led to some not having an assigned job until weeks before start. Many were left in limbo on reserve lists, reflecting a post deficit and late allocations.
2025	Rankings error → offers retracted	Radiology ST1	Radiology ST1 recruitment experienced miscalculated rankings on Oriel, leading to faulty offers. Candidates who accepted them were removed from other specialty shortlists. Offers were revoked, leaving applicants without placements.
2025	Scoring Error → Incorrect Rankings & Offers	Plastic Surgery ST3	A scoring calculation error during national recruitment led to incorrect rankings. The interview score was supposed to be out of 72 but was calculated as 48, affecting the weighted overall score. Offers were adjusted accordingly.

Alongside the issues mentioned above with recruitment, we must tackle the real risk of artificial intelligence (AI) tools being used to gain an unfair advantage in recruitment cycles. The rise of ambient AI tools to assist day-to-day tasks whilst useful has been capitalised to provide users with an edge over their competition.

An example of this tool is Cluely AI, which is marketed as a completely undetectable AI assistant, allowing the use to "gain an unfair advantage in every call without anyone knowing"[20]. These tools are being openly advertised for use in professional recruitment, including healthcare, and have been the subject of widespread media coverage. We are aware of anecdotal reports from previous recruitment cycles that suggest they have already been used.

The availability of such undetectable tools fundamentally undermines the integrity of the recruitment process. If candidates can receive undetectable real-time support during interviews, the ability of the system to identify safe, competent, and motivated future doctors is significantly compromised. The result is a process that cannot be relied upon to discriminate fairly between candidates, nor to uphold the standards of the medical profession.

We are particularly concerned about the following risks:

- **Equity and fairness:** virtual interviews combined with undetectable AI tools create an uneven playing field, disadvantaging honest applicants. Furthermore, the use of AI tools disproportionately benefits those with access to such technology and those without the risk of losing GMC registration.
- **Public confidence:** knowledge that doctors may have secured training posts through AI assistance risks significantly damaging trust in the medical profession and by extension, recruitment bodies.
- **Workforce sustainability:** appointing candidates whose ability is not up to standard threatens the future capability and resilience of the NHS workforce.
- **Regulatory responsibility:** the GMC and statutory education bodies expect recruitment processes to be valid, reliable, and defensible. Virtual recruitment in its current form risks falling short of these expectations.
- **Patient safety:** admitting candidates who succeed via AI assistance rather than competence poses a direct and long-term risk to the safety and quality of patient care.

> ***The above risks make it clear that virtual recruitment in its current format is not sustainable and moving forward cannot be considered fair, valid or secure.***

Furthermore, other sectors with significantly more financial capital are moving back to face-to-face elements of recruitment to tackle this growing rise in the use of ambient AI. Examples include:

- Deloitte UK – has transitioned back to face-to-face interviews due to concerns raised by the Financial Reporting Council[21].

- Google, Cisco and McKinsey – all have reintroduced face-to-face interviews to ensure authenticity and reduce AI-assisted cheating during virtual interviews[22].

The fact that several companies are switching parts or all of their recruitment back to face-to-face highlights the scale of the problem. As ambient AI tools become increasingly sophisticated, the MDRS simply does not have the resources to keep pace with an AI arms race, leaving honest candidates at a clear disadvantage.

1.3.2 Barriers to Portfolio Careers

A significant number of consultants and resident surgeons are undertaking portfolio activities outside of clinical practice. Some areas are better recognised and supported than others. Fundamentally, this shift in how surgeons practice in the future will bring significant positives to the NHS, equipping surgeons across a variety of necessary skills to help deliver the highest standards of care.

There exist key themes that surgeons chose to invest in outside of clinical operating.

These include the following:

- Academia
- Educational
- Leadership and Management
- Innovation
- Humanitarian/Global Surgery

Trainee surgeons need to be allowed time, support and logistics to develop their interests in the above fields to help bring about significant benefit to the NHS but also to experience a rich and varied career ultimately boosting morale and retention.

We have looked at specific barriers to training and solutions to improve them within each specific portfolio pathway a trainee may undertake. However, in doing so, we have recognised common barriers that are applicable to all aspects of training.

Common barriers to pursuing portfolio activities:

01

Lack of Protected Time & Service Pressures

- Across all domains, trainees struggle to engage meaningfully due to full rotas, intense service demands, and lack of ring-fenced time.
- Clinical duties routinely encroach on academic, teaching, leadership, and innovation activities.
- For humanitarian surgery, time out of training is often difficult to arrange and risks prolonging CCT.

02

Poor Recognition Within Training Frameworks

- Activities outside of core clinical training (e.g. research, teaching, leadership roles, humanitarian work) are often not formally recognised in ARCPs, portfolios, or curricula.
- Few mechanisms exist to give credit or assessment value to achievements in these domains.

03

Cultural and Institutional Resistance

- There is often a "service-first" culture within surgical departments that undervalues non-technical development.
- Some trainers or employers view academia, leadership, or humanitarian work as distractions or luxuries.
- Cultural inertia slows acceptance of broader skillsets as integral to being a surgeon.

04

Limited Access, Equity & Visibility

- Formal posts (e.g. ACFs, Clinical Entrepreneur, humanitarian fellowships) are few and highly competitive.
- Regional and socioeconomic disparities affect who can access opportunities, especially for self-funded ventures.
- Many trainees report a lack of clear signposting or mentorship for non-traditional career pathways.

05

Financial & Logistical Barriers

- Courses, fellowships, degrees, and overseas placements often involve personal financial investment with limited or no reimbursement.
- Logistical challenges (e.g. insurance for humanitarian work, bureaucracy, work visas) further complicate participation, especially for underrepresented or international trainees.

1.3.3 Barriers to accessing high quality academic training in surgery

Limited posts and intense competition:

- There are ongoing issues with the stagnation of academic posts and an ever-increasing candidate pool. Whilst selection into an academic training pathway needs to be rigorous, the relative stagnation of academic posts proves a significant bottleneck to trainees wishing to pursue academic training as part of their career[23].
- The lack of expansion of ACFs/ACLs particularly within surgery represents a significant bottleneck driving the need for increasingly stronger CV's at an earlier stage of training, potentially driving away exemplar candidates from securing these posts. There is often a reliance on these posts being funded through NIHR mechanisms, rather than directly by universities. Consequently, there may be no ring-fencing, with surgeons competing with other specialties for a single post.

Financial constrains:

- Due to the financial climate and other associated cuts in discretionary research funding, increasing amounts of academic costs are being passed on to trainees[23].
- Whilst the time on a protected and funded doctoral research fellowship may be appropriately renumerated, this is often not the case for trainees who carry out preparatory work for these fellowships in their own time.
- This prices out trainees from less well-off socio-economic backgrounds or those with caring or parental responsibilities, leading to differential outcomes in success in an academic pathway.

Diversity and inclusion challenges:

- Ongoing issues exist around the representation of minorities and women within surgical academics. This shows that current pathways still remain inaccessible to all and that systemic barriers may be in place stopping underrepresented groups form accessing this high quality training[24].

Lack of protected research time:

- Despite a clear recognition of an integrated academic training pathway, surgeons still report ongoing issues with accessing dedicated time for research during training.
- A 2017 survey showed that less than a third of trainees had dedicated research time and 73% were still pulled into clinical duties during supposedly protected research time[24].
- Ongoing increases in heavy clinical workloads have a direct impact on the ability of an academic surgeon to meaningfully engage in high quality academic work.

Poor access to mentorship:

- The rotational nature of training can have an impact on forming robust high-quality mentorship. This has been directly linked to trainees reporting difficulties in establishing high quality mentor-mentee relationships[23]. Without consistent mentors, trainees find it challenging to navigate the often-complex world of academic surgery.
- The relative shrinking of academic surgical units also means it might be more difficult for a trainee to encounter a research mentor who can help them to navigate NIHR/MRC and university structures.

Cultural and peer support issues:

- Academic trainees can face negative views in the workplace and from their colleagues.
- About 40% of trainees reported encountering negative sentiment regarding their academic training from colleagues[24].
- There is still a pervasive and ongoing cultural barrier where research and academic trainees are seen as less engaged and distracted from clinical training. This can and does put off early-stage academics from pursuing a career in academic surgery.

1.3.4 Barriers to accessing training in leadership and management

Limited formal training and awareness:

- Only recently have leadership and management outcomes been embedded within surgical curricula however access to these opportunities remains limited[25].
- The fundamental problem is that many trainees and trainers have a lack of understanding of what leadership means[25] and therefore its importance is underappreciated leading to low engagement in existing leadership programmes.

Cultural attitudes:

- There is a persistent attitude that technical skills trump leadership skills. Training focuses on the development of a technically competent surgeon as opposed to a surgeon equipped to work within the logistics of the NHS.
- Persistent negative attitudes to training in leadership leads to early stage surgeons being put off pursuing this particular path[26].
- Furthermore, a lack of dedicated mentorship available to trainees exacerbates this issue and trainees struggle to find meaningful leadership experiences.

Competition and Cost:

- There are limited opportunities for formal training in leadership and management available to trainees and these are often targeted at trainees in the later years of their training[27].
- Fewer opportunities translate into higher competition ratios and with the recent dissolution of NHS England, concern whether opportunities such as NHS Leadership Academy or Chief Registrar roles are going to be continued.
- Often, formal leadership courses are associated with significant cost and study leave budgets rarely extend to cover the entire cost of the course. There is significant regional variability to accessing these leadership courses and fragmented access means trainees lack equity in access to leadership development resources across the UK.

Workload and rotational placements:

- Due to ever increasing clinical burdens, there is often very little additional time to engage in leadership/management activities.
- Furthermore, due to the hyper-rotational nature of some placements, there isn't the time or opportunity to establish key relationships with relevant stakeholders to meaningfully engage in leadership and management activity[26].
- The above factors create a self-perpetuating cycle - departments and services that would benefit from trainees driving change via service evaluation and quality improvement are often unable to do so, further propagating uneven access to these opportunities.

Fear and identity issues:

- Many resident doctors do not initially identify as leaders despite undertaking clinical activity that clearly requires the demonstration of leadership skills[26].
- A lack of understanding around clinical leadership roles within the NHS and a fear of failure in these roles leads to historically low uptake of leadership opportunities offered.
- Access to local committees and management meetings form key formative experiences for those wishing to pursue additional skills in leadership/ management and the above factors may dissuade residents from engaging.

Minimal recognition and incentives:

- Engagement in leadership activities within current training programmes are viewed as tick box exercises as opposed to avenues for allowing trainees to further explore this area.
- This tick box approach leads to the majority of trainees feeling like leadership and management are a burden on top of clinical training as opposed to an integral part of training[25].
- Without appropriate recognition or incentive there is very little impetus for trainees to invest their time in leadership and management.

1.3.5 Barriers to surgical trainees engaging in educational roles

Time constraints and service pressures:

- Teaching and educator development is being severely hampered by heavy service workloads and working hours.
- A recent survey shows that 52% of UK Surgical trainees reported inadequate time for training because service delivery takes priority[7].
- Training and teaching have been sacrificed on the altar of productivity and delivery of service, despite being a key pillar of clinical governance.
- Loss of the firm apprenticeship structure has led to lost opportunities for informal teaching and mentoring on the job.

Mentorship and culture gaps:

- Trainees lack mentorship and role models in medical education.
- Nearly 48% of identified surgical trainees had no mentor at all but 83% wanted access to formal mentoring training[29].
- Without mentorship from educators, trainees can struggle to engage in teaching roles and may not be aware of opportunities for upskilling that may be available.
- Furthermore, there is a bias towards technical skill and research output over teaching, indicating a possible academic bias in career advancement, further disincentivizing trainees from engaging with education[28].
- If the departments within which we work do not promote education, this creates a further barrier for trainees who may be keen to engage in teaching.

Lack of formal integration and recognition:

- Educators often develop their skills with extra voluntary effort as opposed to a core part of their training or job plans.
- Formal teaching qualifications such as PGCerts are undertaken in trainee's personal time and not built into curricula. These costs are also footed by trainees[28].
- Ward based teaching and supervision of junior colleagues is provided on top of clinical duties as opposed to having protected time for this.
- All the above spill into the work-life balance and increase the financial burden on trainees.
- There is little structural incentive or protected time for resident doctors to develop teaching skills, and trainees feel that their contributions to teaching and education are undervalued.

Limited opportunities and financial barriers:

- Formal educator - training routes exist, however access to these is limited.
- Cost of accessing formal training can be prohibitive - the costs often exceed what is allowed on a study leave budget and personal financing is required, which can be a significant deterrent to pursuing these opportunities.
- Many trainees find it difficult to secure funding, time off or local support to pursue formal educational credentials.

1.3.6 Barriers to Surgical Trainee innovation

Limited time and resources:

- Worsening and intensifying service pressures leave trainees with little time to explore interests particularly within the sphere of innovation.
- Formal innovation fellowships are almost non-existent and the few opportunities available are intensely competitive.
- This makes it very difficult for trainees to engage in high quality innovation alongside clinical duties.

Gaps in innovation education:

- Currently, traditional surgical curricula rarely include formal training in innovation, entrepreneurship or MedTech development. Trainees often lack the skills to and knowledge to translate ideas into solutions[30].
- There is a clear need for an integrated innovation training pathway to embed innovation education from medical school through to post-CCT.

Lack of mentorship and support networks:

- Relatively few established mentors or role models currently exist for surgical innovators. Many trainees rely on ad-hoc guidance and chance encounters to advance within the field of innovation.
- There is inconsistent reward and support for innovating while in training, leading trainees to feel like pursuing novel solutions is not a part of traditional training[23].

Cultural and systemic inertia:

- Introduction of new surgical technology within the NHS can be frustrating due to bureaucratic hurdles and an overall risk averse approach.
- Other challenges include - resistance to change, length regulatory approvals and complex procurement practices[31].

1.3.7 Barriers to engaging in Humanitarian work as a trainee

Training programme constraints:

- Humanitarian deployments usually require time out of training and do not contribute towards CCT.
- A 2018 - 2019 survey found that 88% of UK orthopaedic trainees would volunteer abroad if it counted toward CCT - currently this counts as out of programme experience[32].
  - Of this, only 60% of TPD's who responded had a pathway to enable overseas work for trainees, reflecting a lack of formal integration.

Service and career impact:

- Releasing trainees for humanitarian work can create service pressures and rota gaps, making employers reluctant to release trainees.
- Other issues include a fear of falling behind, missing key career milestones and a loss of logbook numbers despite the trainee gaining operative numbers on the humanitarian mission, but these numbers are not recognised[33].

Legal, licensing and insurance issues:

- Obtaining temporary medical registration in the host country, arranging medical indemnity can all be complex and costly to navigate and with very little standardised guidance around, difficult to navigate as well.

Skills Mismatch and Training gaps:

- Due to the sub-specialism focus that UK surgical training has, skills gained in resource and technology rich environments may not directly translate to austere environments.
- Dedicated preparatory courses to upskills trainees in a variety of general skills that can be deployed in low resource settings exist, but these are costly, competitive and not widely accessible.
- Without accessible training in humanitarian surgical skills trainees lack confidence and competence to deploy.

Limited institutional support and guidance:

- Many trainees report a lack of official guidance on trainees being involved in humanitarian work from bodies such as the Royal Colleges or JCST[32].
- This is an area not traditionally covered or accounted for in training curricula, leading to trainees resorting to ad-hoc agreements with TPDs which can discourage participation and create uncertainty about a long term career.

Financial and personal barriers:

- Humanitarian missions may come at significant personal cost to the trainee. Trainees may need to fund travel, insurance and living expenses largely on their own and may face opportunity costs such as lost salaries[34].
- Taking time out of training can affect contributions to pensions, complicate immigration status for trainees on work visas, which are deterrents which disproportionately impact certain groups of trainees[35].
- Family or caregiving responsibilities are another local barrier, and this may be untenable for those with dependents.

Safety and wellbeing concerns:

- Missions take place in austere enviroments which can include conflict zones or disaster areas. While these inherent stressors around personal safety and lack of access to gold standards of care are definitely present, a lack of standardised assessment or access to formal mentorship for those thinking of undertaking such missions significantly amplifies these stressors further.

Eligibility requirements:

- Formal humanitarian organisations have entry requirements that can exclude trainees both from an experience and time commitment perspective.
- This means trainees at a more junior stage are often ineligible to take part and senior trainees may have other commitments which can supersede.

1.4 Culture and Inclusion

Despite increasing diversity within the surgical trainee population, doctors from minority ethnic backgrounds, individuals with disabilities, and other underrepresented groups continue to face distinct and systemic challenges throughout their training journeys. These include exposure to microaggressions, exclusionary behaviours, and limited access to mentorship, research opportunities, and competitive training placements - all of which contribute to differential attainment in examinations, recruitment, and career progression.

In the surgical context, these issues are particularly pronounced due to a historically hierarchical culture that has, in some cases, normalised behaviours such as dismissiveness, stereotyping, or the marginalisation of voices that differ from the majority. For example, subtle biases can manifest in the assignment of operative opportunities, informal teaching, or the level of supervision offered, ultimately influencing a trainee's progression and confidence. The surgical training environment must also reckon with the significant prevalence of sexual harassment, as evidenced by recent national reports, where operating theatres and surgical conferences were identified as common settings for inappropriate conduct. These findings reinforce the need for urgent, systemic cultural change within surgery.

Trainees from diverse backgrounds often encounter additional hurdles in accessing supportive networks and sponsorship opportunities, both of which are critical for career advancement in surgery. For those with visible or invisible disabilities, the physical demands of surgery, coupled with a lack of formal accommodations or understanding from colleagues, can further marginalise their participation and progression. Without intentional structural reform, these inequities risk perpetuating a surgical workforce that does not reflect the diversity of the medical workforce.

To address these disparities, surgical education systems must adopt a zero-tolerance approach to discrimination and embed equity as a core principle of training. Effective and psychologically safe mechanisms for reporting concerns such as discrimination, harassment, or bias, must be clearly defined, with transparent escalation pathways, timely resolution processes, and communicated outcomes that build trust in institutional responses. Reporting structures must be independent, confidential, and protected from retaliation, particularly given the power differentials inherent in surgical hierarchies.

An inclusive and supportive learning environment in surgery goes beyond compliance, it requires active engagement at all levels of seniority. Surgical educators, consultants, and training programme directors must be equipped with the tools and cultural competence to support all trainees equitably. Formal inclusion training, inclusive recruitment panels, and routine data monitoring for differential attainment are essential steps. Equally important is the presence of diverse role models and senior champions who can inspire and guide underrepresented trainees.

Creating a culture of belonging within surgical training will not only improve retention and morale but will also enhance patient care by cultivating a workforce that is representative, empathetic, and culturally responsive. Inclusion must be considered a marker of excellence in surgical education, not an optional extra.

1.4.1 Persistent Gender Imbalance in Surgery

Gender imbalance remains one of the most visible disparities within surgical careers in the UK. Although women now represent more than half of all medical school entrants, they continue to form only a small minority of consultant surgeons. As of 2024, approximately 17% of consultant surgeons are female, a steady increase from just 3% in 1991, but still indicative of a significant gender gap compared with the makeup of doctors and medical students[36]. The gender gap is improving, but more needs to be done to ensure equity of access and training opportunities within surgery.

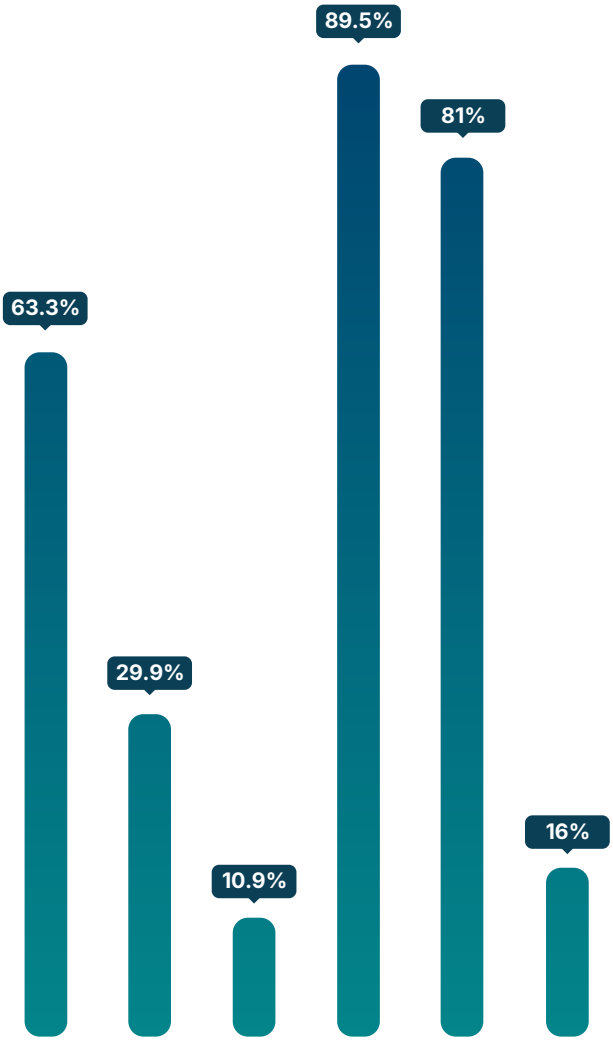
The disparity becomes more pronounced along the career pipeline. While women account for about 33% of surgical trainees, their representation dramatically drops at the consultant level[7]. Contributing factors include a historical lack of female role models in surgery, the perception of surgery as incompatible with work-life balance, and persistent issues of sexism and gender bias within the profession.

1.4.2 Sexual Harassment in Surgery

A landmark 2023 study titled Breaking the Silence: Addressing Sexual Misconduct in Healthcare, conducted by the Working Party on Sexual Misconduct in Surgery (WPSMS) in collaboration with the University of Exeter and the University of Surrey, surveyed 1,434 surgical professionals[37].

Key findings of the report included:

- **63.3%** of female respondents reported experiencing sexual harassment from colleagues.
- **29.9%** of women had been sexually assaulted by a colleague.
- **10.9%** reported coerced physical contact linked to career advancement.
- **89.5%** of women and **81%** of men had witnessed sexual misconduct.
- Only **16%** of those affected formally reported incidents, often due to fears of career repercussions and a lack of faith in institutional responses.
- **11** instances of rape were reported, occurring in settings such as operating theatres, conferences, and after-work events.



These findings highlight an unacceptable and unsafe working environment where gender bias is unfortunately entrenched and exacerbated by hierarchical structures, power imbalances and an environment of suppressed voices and unchallenged norms.

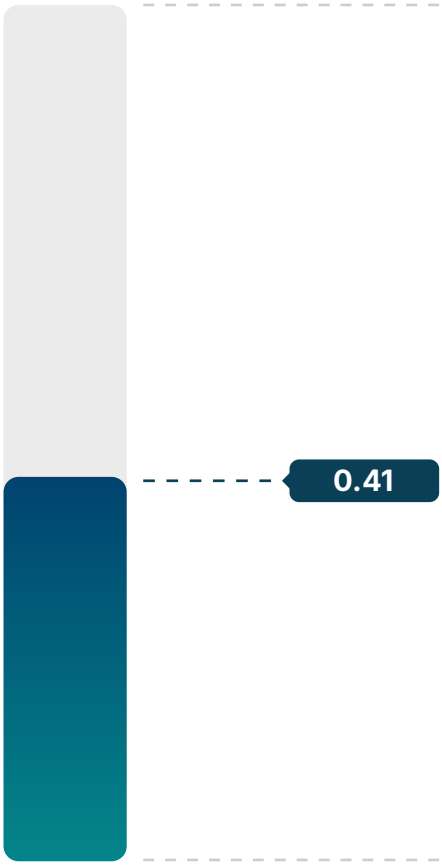
1.4.3 Ethnic and Racial Diversity: Representation and Attainment Gaps

The UK surgical workforce is ethnically diverse at the trainee level - about 43% of respondents in the Surgical Workforce Census identified as being from ethnic minority backgrounds[7]. However, despite this diversity, significant disparities exist in recruitment outcomes and exam success rates. Doctors from Black and some Asian backgrounds, as well as IMGs, tend to have lower success rates in both recruitment processes and exams when compared to white UK graduates[38].

The recruitment practices utilised by national recruitment bodies into surgery are at significant risk of differential attainment. The Multi-specialty Recruitment Assessment (MSRA) has been shown to be more sensitive to protected characteristics such as ethnicity and socio-economic status when compared with other selection methods[39]. These tools have not been reviewed, and no efforts are underway to see if success at MSRA constitutes success in a surgical career.

Data from the Membership of the Royal College of Surgeons (MRCS) exams reveal that white candidates are significantly more likely to pass Part A and Part B on their first attempt, even after adjusting for confounding variables[40].

> ***Specifically, one study showed that Black candidates had an odds ratio of just 0.41 for passing Part B on the first attempt, compared to white candidates[38].***



These gaps raise concerns about fairness in the training process and point to possible systemic or unconscious biases in how trainees are prepared and assessed. In addition, trainees from ethnic minority backgrounds report higher rates of microaggressions and feel less supported by mentors, which suggests deeper issues of inclusion within training environments.

The GMC's data across all medical specialties reflect similar trends, with persistent disparities in exam pass rates and ARCP outcomes between white and Black and Minority Ethnic (BME) trainees, and between UK graduates and IMGs[38]. Another study analysing 271 CST records found that female trainees were more likely to receive less satisfactory Annual Review of Competency Progression Outcomes (ARCPOs) compared to male trainees (Odds Ratio [OR] 0.53, p=0.043)[41]. In response, RCSEng has stated that the issue is not a "learner deficit" but rather structural inequalities within the training environment[40]. The College has committed to closing the attainment gap within five years and is implementing actions such as revising exam designs to reduce bias, diversifying examiner panels, and expanding access to exam preparation resources.

Meanwhile, the GMC is running a national program titled Tackling Differential Attainment, which collaborates with Royal Colleges to implement targeted interventions like coaching and mentoring schemes for underrepresented and disadvantaged groups[42].

1.4.4 Inclusion and Cultural Change

Inclusion extends beyond statistics to encompass the day-to-day experience of working in surgery. A truly inclusive environment is one where everyone - regardless of religion, disability, sexual orientation, or other characteristics - feels valued and respected. For instance, some Muslim trainees report difficulties obtaining leave for religious holidays or finding halal food in hospitals. LGBTQ+ trainees may not always feel comfortable being open about their identity within what can still be a traditionally conservative culture. Similarly, surgical training has historically been less accommodating for individuals with disabilities, though there are several notable examples of successful surgeons who have thrived with the right adjustments.

Feelings of exclusion are not limited to identity characteristics. Many foundation and core trainees report feeling "low in the hierarchy," where their perspectives are overlooked or undervalued[43]. True inclusion means creating an environment where even the most junior team members are heard, supported, and empowered to learn and grow.

Together, these challenges highlight the need for ongoing structural reform, mentorship, and a sustained commitment to equity, diversity, and inclusion across all levels of surgical training and practice.

1.5 Building a fit-for-future training pathway

Across both primary and secondary care, there is growing recognition that newly qualified consultants, general practitioners, and resident doctors often do not feel adequately prepared for the demands of independent clinical practice. This concern is particularly relevant in surgery, where the transition from trainee to consultant is not only a leap in clinical responsibility but also a profound shift in leadership, decision-making, and service delivery expectations.

Evidence from both UK-based and international studies has raised critical questions about whether current postgraduate medical education pathways especially within surgery, are sufficiently aligned with the realities of contemporary clinical environments. Surgical trainees are expected to enter consultant posts with a high degree of technical proficiency, sound judgment under pressure, leadership of multidisciplinary teams, and an ability to navigate complex patient and system-level challenges. Yet many report gaps in their training related to operative confidence, non-technical skills, and systems-based practice.

These concerns are further magnified by rapid changes in the healthcare landscape, including increased patient complexity, digital transformation, rising procedural subspecialisation, outsourcing of operations to the independent sector and the demand for more community-based and preventive models of care. In this context, the traditional model of time-based surgical training alone may no longer fully meet the evolving expectations of patients, health systems, or surgical employers.

Surgical education must now equip future consultants not only with refined technical skills but also with the ability to lead services, allocate limited resources, engage in quality improvement, and adapt quickly to new technologies or unforeseen disruptions. Leadership, service development, financial literacy, and preparedness for dealing with litigation or critical incidents must be embedded into the training journey, not left to be learned reactively in consultant practice.

Equally important is the role and integration of non-training grade doctors including Locally Employed doctors (LED) and Specialty and Associate Specialist (SAS) doctors, within surgical services. These professionals represent a vital and growing segment of the surgical workforce, often bringing valuable skills, international experience, and service continuity. However, the current postgraduate system offers limited formal support for their ongoing professional development, leading to missed opportunities for upskilling, recognition, and progression. The role is often utilised as a stopgap for poor workforce planning, leaving individuals in the role in limbo. The lack of structured educational support, mentorship, and access to credentialed pathways contributes to poor retention and career dissatisfaction among this group - ultimately weakening the stability of surgical teams.

To address these challenges, a multi-faceted approach is needed. First, higher surgical training must be redesigned to ensure that newly appointed consultants are “day-one ready” across both technical and non-technical domains. Secondly, parallel professional development pathways must be created for SAS surgeons, allowing them to contribute meaningfully to surgical services while accessing structured training, supervision, and opportunities for credentialed career progression.

Thirdly, LED roles must be factored into national workforce planning and ensure that there are clear rationale and need for the expansion of LED posts vs training numbers to avoid creating a lost tribe of residents.

Strengthening preparedness across all levels of the surgical workforce is essential to safeguarding patient outcomes, service resilience, and the future of UK surgery. Without a comprehensive strategy to support both trainee and non-training doctors, the NHS risks losing a significant pool of surgical talent at a time of growing demand.

1.5.1 Insufficient Operative Experience and Technical Readiness

The COVID-19 pandemic had a profound impact on surgical training, with over 3 million surgical training opportunities lost between March 2020 and late 2022 due to service disruptions and prioritisation of recovery efforts[44]. This substantial loss has had a cascading effect on the preparedness of new consultants. With this lack of training opportunities, trainees are increasingly struggling to meet requirements for CCT, leading to either delays in CCT or the need for post-CCT fellowships to achieve competencies that should have been gained during higher surgical training.

> ***A study examining newly appointed consultants found that a significant minority reported feeling "unprepared for consultantship."***

In particular, a survey of new orthopaedic consultants revealed that those who felt unprepared tended to have lower confidence levels across a variety of clinical and operative skills[45].

Further supporting this concern, the JCST reported that a significant minority of final-year surgical trainees did not feel ready to take on a consultant role immediately post-CCT without further training[46]. The most cited reason was insufficient operative exposure, especially in advanced or complex cases.

Post-CCT fellowships have increasingly become a common route for bridging this readiness gap; many trainees now seek additional specialist experience after completion of specialist training to bolster their operative competencies[47].

The Improving Surgical Training (IST) pilot programme offered encouraging evidence regarding how structural changes can positively affect training outcomes. IST trainees, as a group, demonstrated faster acquisition of operative skills and logged more procedures across a range of index operations compared to their non-IST peers[48].

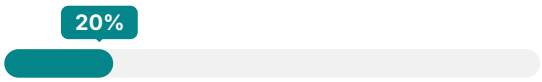
This suggests that structured enhancements such as protected trainer time and expanded use of simulation, can improve technical preparedness[48]. However, the IST evaluation also identified structural limitations. Not all participating sites fully implemented the pilot model, and broader systemic disruptions, such as those from COVID-19, affected outcomes[48].

1.5.2 Lost training opportunities to the independent sector

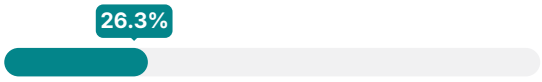
The NHS is increasingly reliant on outsourcing surgical activity beyond traditional NHS trusts. A growing proportion of procedures are now delivered through both independent sector providers and surgical hubs.

Current data demonstrate the scale of this shift:

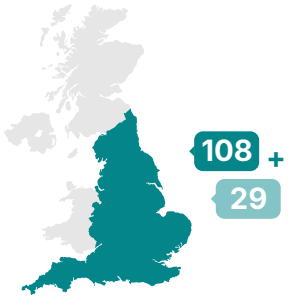
- Independent providers handle approximately 20% of all NHS operations[49].



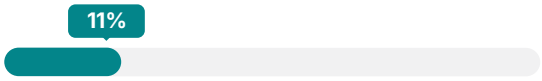
- Within Trauma and Orthopaedics, 26.3% of all NHS activity is provided by the independent sector[49].

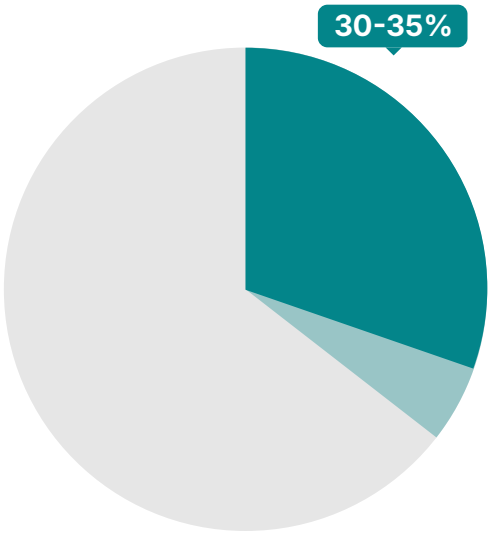


- 108 surgical hubs currently operational across England with an additional 29 hubs due to open by the end of 2025[50].



- It is estimated by 11% of all elective procedures will be carried out in surgical hubs by 2025[51].





Taken together, this means that by the end of 2025, 30 - 35% of all NHS elective operations may take place in independent sector facilities or surgical hubs.

While this expands service capacity, it also represents a substantial loss of training opportunities for surgical trainees, who already face significant barriers to engaging in these settings. Without reform, these risks undermining the future surgical workforce.

Key barriers to training outside the NHS trusts include:

Access and opportunity barriers

- Only 44% of trainees have been able to access the independent sector. Even when opportunities exist, they are often consultant-dependent, creating bottlenecks and inequity in access[52].

Administrative burden:

- Moving between sites requires multiple layers of bureaucracy - registration forms, ID checks, and proof of indemnity - which frequently deter trainee participation[53].

Contractual and Legal Barriers:

- Standard trainee contracts rarely permit work in the independent sector. This forces trainees to rely on honorary contracts or unpaid time outside NHS hours, adding personal and administrative strain[54].
- Indemnity adds further complexity: NHS schemes cover outsourced NHS patients, but mixed lists and additional training (e.g. aesthetic surgery) are excluded[53].

Training quality:

- Even when trainees gain access, the experience is often suboptimal, with 28% reporting they only assisted rather than performed procedures[52].

Barriers to releasing trainees to attend:

- Trusts face operational challenges in releasing trainees to attend independent sector or hub lists, with service delivery often prioritised over training.
- Moreover, the high-volume, low-complexity (HVLC) model used in hubs may not always align with training objectives. Yet without exposure, future consultants will be ill-prepared to lead such service innovations.

These challenges highlight a **significantly underutilised training resource**. As waiting list pressures grow and more procedures move outside NHS trusts, each operation undertaken without trainee involvement represents a lost opportunity. Unless training is embedded within these new models of care, we risk a profound erosion of both the **quality and quantity** of surgical training.

> ***Quite simply, trainees must be enabled to follow the operating - otherwise the next generation of consultants will not be equipped to meet the demands of patients or the NHS.***

1.5.3 Evolving Skillset Requirements in Modern Surgery

While technical and clinical skills remain central to the development of competent surgeons, the modern and future surgical workforce requires a broader skillset. Surgeons must now possess leadership and management capabilities, understand preventative care strategies, and adapt safely to emerging technologies. In addition to operative responsibilities, non-clinical duties such as departmental leadership, service development, and managing older, multi-morbid patients are becoming increasingly prominent.

Despite these demands, current training infrastructure may not sufficiently support this wider preparation. According to the GMC's trainer survey, only 46% of surgical trainers reported that they were always able to use their allocated time to train[4]. This limitation on dedicated mentoring and coaching time could undermine efforts to cultivate "practice readiness" in trainees, especially in essential non-technical domains.

Another ongoing challenge is how to balance the development of generalist versus subspecialist skills within surgical training frameworks. Striking this balance is essential to ensure future surgeons are both adaptable and prepared for increasingly complex care environments.

1.6 Valuing the Educator Workforce

High-quality surgical training requires more than exposure to operative procedures - it demands a structured, supportive, and psychologically safe environment in which residents can develop into confident, competent, and compassionate consultants. A robust postgraduate educational experience must include a wide spectrum of learning opportunities, blending formal teaching with informal, case-based learning at the bedside, in clinic, and in the operating theatre. At the heart of this learning lies the relationship between surgical trainees and their senior colleagues. Meaningful engagement with experienced consultants particularly in high-stakes or technically complex scenarios, not only facilitates technical skill development but also fosters critical decision-making, leadership, and professional identity formation.

However, this ideal is increasingly compromised by rising service pressures and the erosion of time for teaching. In many surgical departments, fractured working patterns, rota gaps, and relentless clinical throughput leave little opportunity for trainers to provide protected, focused educational time. While the rotational model of training offers breadth of exposure to various settings and specialties, frequent moves between hospitals can undermine continuity, a sense of belonging, and the development of trusted mentor-mentee relationships. Trainees report feeling like transient additions to overburdened teams, often fulfilling service needs with limited access to structured teaching or feedback.

Compounding this challenge is the growing educator capacity crisis within the NHS. Many surgical trainers now face significant pressure to meet clinical targets, with educational responsibilities often relegated to “non-essential” duties. The role of the surgical educator remains poorly defined, inconsistently supported, and frequently undervalued. Despite growing expectations from deaneries and regulators regarding trainer performance and accountability, the system offers limited institutional support or incentivisation for those who take on these critical roles.

To address these structural barriers, urgent action is needed on multiple fronts. First, surgical educators must be afforded protected time within their job plans - recognised not as a luxury but as a core component of safe, effective training. This requires institutional accountability from NHS trusts and integrated care systems, with mechanisms to ensure that education is prioritised alongside service delivery in workforce planning. Second, career pathways into surgical education must be formalised and incentivised. Consultants with a passion for teaching should be able to access clear progression frameworks, professional development opportunities, and formal recognition through titles, time allocation, or remuneration.

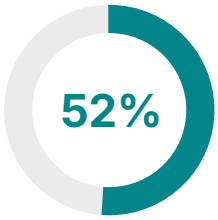
Faculty development programmes also require national investment and expansion. These should include training in adult learning theory, effective feedback, mentorship, and inclusive teaching practices. Alongside consultant trainers, near-peer educators, such as senior registrars and fellows, should be empowered and resourced to support junior trainees, particularly in simulation settings, exam preparation, and ward-based learning. Where available, retired or Emeritus surgeons represent an untapped but invaluable educational resource, and their involvement in teaching and mentorship should be actively supported through schemes that align with pension policy and local workforce needs.

> Ultimately, the sustainability and quality of surgical training will depend on the NHS's ability to build and protect a strong educational workforce. Without adequate support for those who teach, the pipeline of skilled, confident consultants will weaken, placing future service delivery, patient care, and workforce morale at risk. Training and service must not be seen in opposition; rather, they are two pillars of the same structure. By investing in educator capacity, we ensure that surgical excellence is not only delivered today but developed for tomorrow.

1.6.1 Current Issues in the Educator Workforce and Surgical Training

Rising service pressures within the NHS have significantly eroded the time available for clinical supervision and teaching[55]. The impact on trainers themselves is considerable.

> ***A GMC report found that many trainers routinely work beyond their contracted hours, with 52% identified as being at high or moderate risk of burnout[4].***



These conditions are discouraging younger doctors from stepping into educator roles, which are often poorly incentivised and under-supported[55].

The 2023 Educator Workforce Strategy explicitly acknowledged these challenges, noting that "service pressures have eroded time for supervising learners at a time when trainee numbers are increasing" and that "there is a lack of clear career pathways, rewards and opportunities for development" for educators[55].

1.6.2 Structural Deficiencies in Surgical Education

Surgical training programmes that include dedicated Training Programme Directors (TPDs) and structured educational teams such as simulation leads and faculty for exam preparation consistently report higher trainee satisfaction and exam pass rates[48]. However, such comprehensive educational infrastructure is not universally implemented and is under threat with the dissolution of NHS England.

The GMC only recently mandated formal accreditation for trainers, and significant gaps remain in how trusts support this role. For instance, 23% of trainers reported not receiving an appraisal of their educational responsibilities in the past year, suggesting that educator work is not yet consistently recognised or managed across the system[4]. In the GMC's 2023 trainer survey, only 46% of trainers said they were always able to use their allocated time for training duties[4]. Additionally, one-third of trainers in secondary care stated that rota gaps and staffing shortages negatively affected their ability to supervise trainees, a problem particularly acute in procedural specialties - 41% of surgical trainers reported that training is compromised by staffing shortages[4].

1.6.3 Mismatch Between Educator and Trainee Growth

With the expansion of the medical workforce, these issues are only set to intensify. NHS workforce plans aim to increase medical student numbers by 5,000 annually between 2025 and 2030[5]. Furthermore, the 10 Year Health Plan for England aims to create 1000 new specialty training posts, further exacerbating this mismatch[5,6].

> ***However, there are no automatic mechanisms in place to scale the educator workforce at the same rate.***

Without intervention, this imbalance will worsen the existing strain on training capacity, as more learners will require more educators, supervision time, and protected teaching hours.

To ensure that increasing trainee numbers translate into well-trained, confident clinicians, the educator workforce must be expanded, better supported, and more formally integrated into workforce planning at both local and national levels.

1.6.4 Current Issues in the Surgical Training Environment

A positive learning environment is essential for effective surgical training. It should be one where trainees feel supported by their supervisors. However, persistent concerns continue to affect the culture of surgical training in the UK.

Bullying and undermining behaviour remain significant issues.

> ***According to the GMC, 11% of all trainees including those outside of surgery, reported feeling deliberately humiliated, and 27% experienced micro-aggressions in the workplace[4].***

These rates were higher among surgical, obstetric, and emergency medicine trainees. In addition, one in ten trainees reported lacking a sense of belonging within their departments, with some feeling more like an extra pair of hands than valued learners[4].

The RCSEng workforce census also highlights that 49% of surgeons cite poor working conditions as a major challenge[7]. Excessive workload pressures contribute to an environment where teaching and feedback are frequently neglected, and trainee wellbeing is compromised. Physical aspects of the workplace also influence training quality. Overcrowded clinics that lack space for teaching, limited access to IT resources or medical libraries, and inadequate rest facilities all detract from a productive and supportive training experience.

Importantly, the GMC's data analysis has shown a clear link between training posts that receive poor feedback on culture and those that face difficulties with recruitment and retention[4]. This underscores the urgent need to prioritise cultural and environmental improvements in surgical training settings.

ASiT

2. Recommendations and Solutions

Association of Surgeons in Training

asit.org

2.1 Workforce Planning and Distribution

2.2 Supporting Trainees

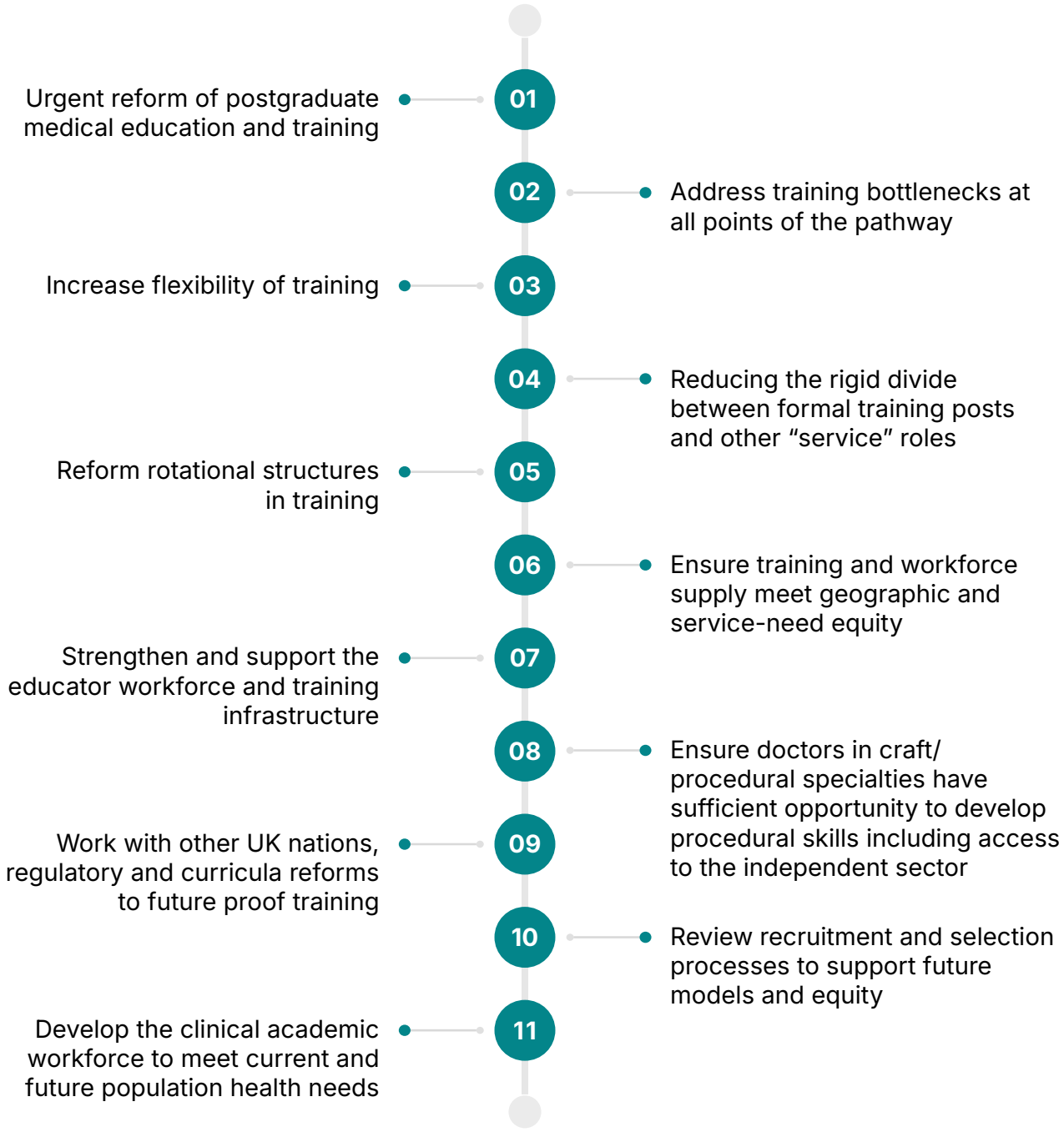
2.2 Supporting Trainees

2.4 Building a Fit-for-future training pathway

2.5 Strengthening the Educator Workforce

We believe that a concentrated effort is required off a common blueprint to help resolve some of the systemic issues within surgical training alongside a fundamental shift in mindset to help change the culture of surgery. The recent publication of the Medical Training Review (MTR), Phase 1 Diagnostic Report goes a long way to providing us with a common blueprint to help achieve significant reform in postgraduate surgical training[57]. However, it is now up to the relevant stakeholders within surgery to help tailor and deliver these changes within surgery.

It is useful to see that the outcomes and recommendations from the Phase 1 output of the MTR align very closely with the findings of our report along with our recommendations. Summarising the key recommendations of the MTR review below[57]:



We welcome the recognition that craft specialties have unique needs and the ability to practice your craft is paramount to receiving adequate training within craft specialties. Furthermore, as increasing planned elective activity is outsourced to the independent sector, it is vital that surgical trainees follow these cases to where they are being carried out.

There is a key focus on resident doctor wellbeing and the quality of training while they are in the workplace within the MTR Phase 1 report. Moves towards improving this have already taken place and in particular, we welcome the recommendations by NHS England in the report "10 Point Plan to improve resident doctors' working lives"[58]. We welcome the following initiatives:

- Earlier reimbursement of study leave expenses.
- National implementation of Lead Employer Models to reduce duplication and administrative errors while improving continuity, efficiency.
- Overall reduction of administrative burden and payroll issues.

Whilst the above initiatives are welcome and much needed, there remain specific challenges within surgical training that the MTR Phase 1 report does not fully address. In the following sections, we outline practical, specialty-relevant proposals to help alleviate these pressures. Some of these solutions are cost-neutral and could be implemented rapidly; others will require targeted investment and collaborative planning. The MTR Phase 1 report offers a valuable framework; our task now, alongside key surgical stakeholders, is to translate this into sustainable, specialty-appropriate action. Above all, we must remain mindful of the core principle: without training today, there will be no surgeons tomorrow.

2.1 Workforce Planning and Distribution

2.1.1 Avoiding Bottlenecks in Surgical Training Expansion

> ***Any proposed increase in core or registrar training numbers must be accompanied by robust workforce modelling and a corresponding increase in consultant posts.***

This is particularly critical in surgery, where bottlenecks at the point of consultant appointment are a known risk. Without coordinated planning, simply increasing trainee numbers will not address systemic gaps and may worsen existing imbalances. We do not advocate for an increase in training posts without a representative increase in consultant posts to ensure that trainees in the pathway are able to obtain consultant jobs.

To further avoid compounding bottlenecks, the ongoing delivery and expansion of portfolio pathways to CCT needs review and brought in line with national modelling. This is expanded upon further below.

2.1.2 Strategic Expansion of Training Posts

To address regional shortages, training posts must be strategically expanded in both core and higher surgical training, especially in areas with limited coverage. This could include the creation of training rotations that incorporate peripheral hospitals, enhancing training reach and retention.

Financial and career incentives, such as relocation support or targeted fellowships can be powerful tools to encourage trainees to work in underserved areas. For regions with chronically underfilled posts, there must be clear mechanisms to support further rounds of recruitment, in coordination with national recruitment offices and Specialty Advisory Committees (SACs).

Flexibility in recruitment practices is essential to ensure adequate staffing in underserved locations. However, all the above must consider a nationally coherent training pathway - increasing one end of the supply chain only seeks to compound bottlenecks at a later stage.

2.1.3 A Nationally Coherent Training Pathway

All current training pathways must align with national trends and consider the following key factors:

- The future healthcare needs of the population
- The number of consultant posts required to deliver services
- The maintenance of safe service levels
- The geographical distribution of services

There is a pressing need for a national model that spans from medical school admission to consultant appointments, to reduce recruitment bottlenecks where possible.

Portfolio pathways traditionally are not included in these models which risk compounding consultant level bottlenecks as well as affecting progression due to limited exam capacity at the FRCS level. There needs to be a coherent model that considers the various pathways to CCT and ensures that these are accounted for in the development and delivery of national training numbers (NTN's). NTN's must be prioritised in this model, but portfolio pathways provide an alternative to those with significant prior clinical experience within their specialties.

2.1.4 Establishing Regional Medical Schools and Training Hubs

The opening of new medical schools and training hubs in underserved areas, such as those in Sunderland and Lincoln is a deliberate move to increase the likelihood of graduates remaining in the communities where they train. The NHS Long Term Workforce Plan explicitly links such expansions to the goal of "levelling up" regional training capacity[5].

However, this expansion must be underpinned by long-term workforce planning to prevent the emergence of new bottlenecks. It is also critical that trainees on new regional programmes have equal access to high-quality training, and that standards for completion of training are consistent nationwide.

> ***The establishment of new medical schools must be matched with appropriate investment in both time and funding to support educators...***

...and comprehensive planning to accommodate the increased influx of medical graduates into the healthcare system. This includes increased investment in educational supervisors, educational facilities, appropriate foundation and specialty training posts in line with a national model for a training pathway.

2.1.5 Innovative Training Models

The hub-and-spoke training model offers a viable solution, allowing trainees based in smaller or rural hospitals to rotate into high-volume centres to gain specific clinical experience, while remaining grounded in their regional setting. Similarly, specialist elective surgical hubs, designed to reduce backlogs, must include training opportunities within their operational models. To be effective, this inclusion must be contractually mandated, ensuring that training cases are not inadvertently excluded from these settings.

> ***This allows trainees flexibility in their geography without compromising on their educational needs.***

2.1.6 Improving Consultant Staffing in Underserved Hospitals

Improved consultant presence is key to both service delivery and high-quality training. Schemes like the NHS Emeritus Doctor Scheme, which enables retired consultants to return to provide supervision and mentorship, serve as effective tools in bolstering consultant capacity in underserved areas[59].

> ***Consultants towards the end of their careers provide a valuable training resource, particularly for early-year trainees.***

Expansion of such schemes must come with pension reform to ensure that these consultants are not unfairly penalised for wanting to remain within the clinical workforce.

2.1.7 Learning from International Examples

Looking abroad, Canada offers a useful model: rural rotations are integrated into surgical residency programmes and supported by financial incentive grants. This approach has been shown to significantly increase the likelihood of trainees remaining in rural or underserved areas to practise[60].

2.2 Supporting Trainees

> In response to the challenges faced by surgical trainees, ASiT has proposed several practical recommendations aimed at creating a supportive and sustainable training environment. Accessing training isn't enough; supporting and valuing trainees throughout the surgical training pathway is key to retaining high quality surgical trainees and safeguarding the future workforce.

2.2.1 Supporting Parenthood in Surgery

Supporting parents in surgical training requires a cultural shift to change a variety of contributing factors. Flexibility in training, support when out of training and an understanding of the demands that parenthood can place on surgical trainees is fundamental to tackling the negative experiences of surgical parents. Some specific recommendations include:

- **Improved flexibility:** Surgical training programs must better accommodate parenthood including expedited LTFT applications, supported return to working and alterations to work patterns specific to the trainees needs.
- **Policy Reforms:** Implementing policies that provide equitable parental leave for all trainees, regardless of gender, and ensuring adequate support for pregnant trainees and new parents during surgical training.
- **Workplace Support:** Enhancing workplace provisions for breastfeeding and offering flexible scheduling to accommodate the needs of parent trainees.
- **Personal Protective Equipment:** Ensuring that all departments have appropriate risk assessments in place to provide adequate or additional PPE to surgical trainees as part of ensuring they can carry on working safely.

Alongside the above, we endorse the recent publication by resident doctors within Paediatrics and Obstetrics & Gynaecology titled "Pregnancy Loss and Fertility Issues in the workplace"[61]. The document goes some way to providing reassurance for trainees experiencing issues within the workplace relating to their fertility and provides a clear resource for further guidance.

2.2.2 Moving towards sustainable and secure recruitment

Persistent issues in recruitment mechanisms need to be independently investigated to identify issues and areas of improvement.

- External review of specialty recruitment mechanisms to assess reliability, validity, acceptability and efficiency of recruitment processes.
- Increased transparency in the recruitment processes with clear policies on appealing, escalating concerns and a transparent annual review.
- Creation of an independent body with trainee representation that trainees can escalate recruitment concerns to in real time, allowing trainees to escalate issues in real time and receive solutions without having to wait a calendar year to reapply.

Current mechanisms to mitigate the use of AI in interviews are not robust enough to address the issue at its source. Training examiners to identify ambient AI technology that is inherently designed to be undetectable is both unreliable and unfair. This approach risks shifting the burden onto trainees to prove their integrity if accused of using AI tools.

The risks posed by continuing virtual recruitment demand an immediate and decisive response to safeguard the fairness and credibility of the selection process for future generations of surgeons.

> ***The only sustainable and defensible long-term solution is an urgent transition back to in-person interviews, supported by rigorous quality assurance mechanisms.***

2.2.3 Work-Life Balance

- Incorporate contractual mandatory self-development time into all core and higher specialty trainee rotas similar to foundation trainees.
- Ensure that annual or study leave requests submitted with more than six weeks' notice are honoured, regardless of clinical duties.
- Provide access to significantly subsidised/free accommodation and hot meals for overnight shifts.

2.2.4 Embedding Flexibility into Surgical Training

To future-proof the surgical workforce, we must normalise and embed flexibility at every level of training design. This includes proactively encouraging LTFT training as a viable and respected option for all trainees, not just those with exceptional circumstances; streamlining approval processes for OOP and training pauses; and ensuring competency-based re-entry pathways are clear, supportive, and educationally sound. Flexibility must be accounted for in workforce modelling, service planning, and rota design to ensure that those choosing non-traditional paths are not disadvantaged or stigmatised.

Additionally, modular and portfolio-based training structures should be expanded, allowing trainees to complete parts of their curriculum in concentrated, interest-driven blocks, including in specialist centres or elective surgical hubs. Such modularity supports educational intensity while accommodating life outside of medicine. Lead employer models and stable geographic placements can also improve flexibility, offering trainees greater control over where they live, train, and build community roots.

By embracing flexibility as a fundamental design principle, not as an exception, surgical training can become more inclusive, responsive, and sustainable. In doing so, the NHS will not only retain a broader and more diverse talent pool but also cultivate a generation of surgeons whose varied skills, lived experiences, and professional passions enrich the specialty and improve patient care.

To create a more inclusive and sustainable training environment, surgical training must normalise LTFT pathways across all specialties. This involves shifting cultural attitudes to promote LTFT as a legitimate and successful route, supported by highlighting positive case studies of part-time trainees and having senior surgical

"champions" who have themselves trained flexibly.

Trusts and training schools must allocate resources in a way that ensures LTFT trainees receive equitable opportunities comparable to their full-time peers. However, current access to LTFT training remains inconsistent and often encumbered by rigid processes. Greater understanding and flexibility are needed within HR departments to reduce the logistical and administrative barriers that many trainees face when pursuing LTFT arrangements.

LTFT training also needs to be formally accounted for in workforce planning and rota design. Without this integration, trainees opting for LTFT risk exacerbating rota gaps, creating additional strain on teams and undermining its viability as a positive initiative.

2.2.5 Flexible Curricula and Credentialing

Surgical training should reflect the reality that skills can be acquired flexibly.

> ***Modular curricula enabling trainees and trainers to incorporate both basic and advanced modules, allow for more personalised progression.***

This includes opportunities to undertake fellowship-level work within flexible frameworks and rotations through high-volume surgical hubs to acquire necessary competencies. Curriculum need to be developed and updated in a modular manner allowing trainees more ownership of their own surgical training and the ability to undertake intense periods of specific modules to reflect their own interests and career development.

2.2.6 Geographic Flexibility and Regional Upskilling

The need for wide geographic rotations should be reduced. Strengthening regional training options, with proper trainee-trainer support can enable the achievement of advanced training outcomes locally. Geographic flexibility also means placing greater value on the trainee-trainer relationship and responding meaningfully to trainees' location preferences, especially where these align with both quality of life and educational needs. The educational needs of the trainee must be considered as well. Where a rotation in a specific centre to gain subspecialist skills has been identified by the trainee and agreed by their trainer, these need to be supported with minimal logistical hurdles, further contributing to flexible and modular training opportunities.

The educator-mentee relationship features heavily in geographic flexibility. Trainees and trainers should have the ability to mutually agree and execute rotations in specific areas and departments as need be. These should be supported by HR and administrative systems and looked upon positively where possible.

Lead employer models and base hospitals exist heterogeneously across the UK in surgical training. If implemented well, these can reduce the administrative burden on trainees, provide them with more long-term geographical stability and allow trainees to plan for their future within training.

By embedding flexibility across these domains, cultural acceptance of LTFT, streamlined out-of-programme pathways, modular credentialing, and regional upskilling - the surgical training pathway can become more adaptable, equitable, and conducive to long-term retention and trainee wellbeing.

2.2.7 Working Culture

To create a supportive and sustainable training environment, a healthy workplace culture must be actively cultivated. This begins with fostering connection and resilience through the establishment of peer support groups, particularly during challenging periods. Experienced clinicians should take an active role in mentoring trainees, helping to create an atmosphere where asking for help is encouraged rather than stigmatised. Organisations must also adopt a zero-tolerance approach to bullying and discrimination, ensuring that both trainees and trainers feel safe to raise concerns without fear of retaliation.

To drive accountability and continuous improvement, independent exit interviews should be implemented after each placement to identify systemic issues and inform meaningful change. Furthermore, financial penalties need to be robustly implemented for failing to issue rotas on time or for leaving rota gaps unfilled, ensuring that workforce planning and trainee wellbeing are treated as organisational priorities rather than afterthoughts.

These combined initiatives aim to tackle the non-financial burdens of surgical training and improve both trainee wellbeing and retention. Together, they represent a roadmap for a more equitable, supportive, and forward-thinking surgical training system in the UK.

2.2.8 Cost of Surgical Training

The prohibitive cost of surgical training places a significant burden on surgical trainees and further exacerbates inequalities within the workforce.

> ***Allocation of study budgets nationally must come with the understanding that craft specialties such as surgery have greater associated costs and there must be an equitable balance of resources to support both necessary and aspirational education for surgical trainees.***

Other proposed solutions for reducing the significant cost of surgical training include:

- No resident doctor in surgery should be required to pay for specialty courses critical for their progression.
- Decisions on the need for a course leading to the subsequent allocation of study leave funding should be made by the Educational Supervisor and the surgical trainee based entirely on the individual's training needs.
- Adequate funding should be provided based on recent research into the real costs of training.
- The first sitting of examinations mandatory for progression should not be borne by trainees.
- Mechanisms around claiming back expenses associated with the study budget need to be streamlined to ensure trainees are not out-of-pocket for educational expenses.

- Creation of a more competitive courses market where trainees have the option to choose courses with the best value for money and avoiding monopoly course providers charging unrealistic course fees.
- Transparency in the utilisation of subscription fees to justify the cost along with annual reviews to ensure the fees are representative.

2.2.9 Work-Life Balance and Self-Rostering

To improve the working lives of surgical trainees, there is an urgent need to address rota gaps and ensure a better balance between service provision and training needs. Predictable rota gaps must be filled proactively, supported by stronger incentives, both financial and non-financial, to ensure full coverage. Additionally, efforts should be made to offload non-training tasks from resident doctors, allowing them to focus on education and clinical development.

Initiatives to improve work-life balance are central to retaining talent in surgery. Trainee-led rota development and self-rostering give doctors greater control over their working lives. Currently, medical rotas are often centrally designed with limited input from the doctors who will be working them. By contrast, trainee-led systems involve resident doctors in designing their own shift patterns within a service-compliant framework.

Several approaches are being piloted or practised internationally:

- **Self-rostering platforms:**
  Used in Scandinavian countries and some NHS pilots, where trainees submit shift preferences online which are used to inform a rota pattern.
- **Collaborative rota design:**
  A trainee representative works with the rota coordinator and consultants in each rotation to create the rota with input from colleagues.
- **Low admin shift-swapping culture:**
  Built-in flexibility allows safe and low-admin shift swaps.
- **Protected requests:**
  Trainees can request specific “must-have” or “strong preference” days off (e.g. for exams, weddings, childcare), which are prioritised during rota creation.

> ***These systems allow trainees to submit their availability, preferences, and constraints, which are then used to generate a rota that balances personal and educational goals with clinical demands.***

2.2.10 Reduction of Administrative Burden

The rotational nature of training and the heterogeneity of the lead employer model results in trainees facing significant administrative burdens when moving between hospitals and trusts. This creates common issues such as a lack of sufficient IT access or parking facilities when joining new trusts and issues with payslip and tax code accuracy. Besides advocating for a lead employer model, this administrative burden must be removed from trainees and become part of HR standard operating policies when trainees rotate in or out of trusts. Other examples to reduce this burden include:

- Trainee passports that include basic requirements when changing trusts such as ID, DBS checks and transferable e-learning modules to streamline induction.
  - The concept of a trainee passport is discussed in further detail in Section 2.1 but encompasses not only administrative information, but also key training metrics linked with the elogbook and ISCP.
- Protected time to complete necessary induction activities prior to the undertaking of clinical activities in the new trust.
- Mandatory department inductions prior to starting clinical activities ensuring the trainee has been acquainted with the local policies and procedures.

> ***AI tools have the potential to significantly reduce the administrative burden placed on trainees.***

These tools can power a range of tasks, such as AI managed e-portfolios, generating discharge summaries, documenting operation notes, writing clinic letters, and completing ward-based tasks. Beyond frontline documentation, AI can also assist Training Programme Directors (TPDs) by helping to track trainee progress, design individualised training pathways, model training numbers, and even optimise rota patterns and rotations.

2.2 Supporting Trainees

2.3.1 Tackling Sexual Harassment

The ongoing sexual harassment of surgical colleagues is an unacceptable practice and the issue must be taken seriously to change the systemic culture that allows such practices to go unchallenged. Recommendations include[37]:

Independent Reporting Mechanisms: Establish confidential, third-party systems for reporting sexual misconduct to ensure impartiality and most importantly, protect complainants from retaliation.

Reform of Investigative Processes: Overhaul current procedures to ensure timely, transparent, and victim-centered investigations, with appropriate sanctions for perpetrators.

- Ensure that all allegations of sexual harassment are undertaken by an independent panel to minimise bias and conflicts of interest.

Mandatory Training: Implement comprehensive training programs focusing on recognizing, preventing, and addressing sexual misconduct, tailored to all levels of the surgical workforce. This must include bystander training for all members of the surgical team as well.

Cultural Change Initiatives: Promote a zero-tolerance culture through leadership commitment, regular audits, and inclusion of sexual misconduct metrics in performance evaluations. Only by talking about the issue are we going to be able to meaningfully change culture to affect positive change.

Support Systems for Victims: Provide accessible psychological support, legal advice, and career guidance to those affected by sexual misconduct.

For a more detailed list of recommendations, we signpost to the WPSMS Report.

2.3.2 Improving Flexibility and Culture to Retain At-Risk Trainees

Increasing flexibility in surgical training and eliminating the stigma around LTFT pathways is essential. When parenthood, caring responsibilities, and work-life balance are accommodated, more trainees with such responsibilities are empowered to complete surgical training and remain in the profession.

Role modelling and mentorship play a critical role in retention. Expanding the Women in Surgery mentorship scheme to ensure that every female trainee is paired with a senior mentor could boost both confidence and long-term retention within the specialty.

2.3.3 Closing Differential Attainment Gaps

Addressing differential attainment requires a multifaceted strategy:

Standardising and Fair Assessments: Exams should be designed to be culturally neutral, and examiners must receive training in equality, diversity, and inclusion. This ensures that assessment is consistent, fair, and free of unconscious bias.

Targeted Support for At-Risk Trainees: Trainees with a higher risk of lower outcomes or those who have previously failed an assessment should receive tailored support. This might include extra training sessions, communication and language support, and practice exams with detailed feedback.

Accountability and Local Monitoring: Training programmes should collect and review outcome data, such as ARCP and exam results by demographic group. If patterns of underperformance are evident in certain hospitals or specialties, they must be investigated and addressed. Such data-driven accountability ensures that systemic issues are not ignored.

Independent review of assessment tools: Recruitment tools and national selection mechanisms need regular and robust reviews for differential attainment and a review to see if they achieve their intended purposes. Otherwise, there is a significant risk that systemic issues in recruitment further propagate differential attainment amongst surgical trainees.

2.3.4 Widening Participation and Promoting Inclusion

To ensure the future surgical workforce reflects the diversity of the population its drawn from, participation must be widened and inclusion actively promoted. Specific measures might include making rotas considerate of religious observances, providing accessible prayer spaces and lactation rooms, and fostering a team ethos where all forms of diversity are respected and valued.

Training in cultural competence for all staff is crucial in reducing microaggressions. Raising awareness of how seemingly minor comments, about ethnicity, accent, gender, or background can cumulatively alienate colleagues is key to creating a safer, more inclusive working environment. This must extend beyond tokenistic e-learning packages; every member of staff must be able to champion an inclusive environment for all.

2.3.5 Leadership and Representation

Representation in leadership is critical to fostering inclusivity and inspiring the next generation. As the saying goes, “you can’t be what you can’t see.” Increasing diversity in surgical leadership roles provides visible role models and signals that excellence and progression are attainable regardless of gender, ethnicity, or background.

Together, these measures contribute to a more supportive and inclusive surgical training environment, better retention, and a workforce that reflects the patients it serves.

2.4 Building a Fit-for-future training pathway

2.4.1 The "day one" Consultant

There is considerable debate and variation across specialties in what defines a day one consultant. However, the loss of training opportunities, worsening service provision to training ratios and curriculum requirements that don't meet population needs further exacerbate this divide.

> ***The solution to the above is not to shift the goalposts of what it means to be a "day one" consultant...***

...but rather to ensure that training throughout the pathway is more educationally dense to ensure that trainees are able to meet the requirements of becoming a consultant without significantly increasing training time.

Proposed reforms to achieve the above include:

- Core Surgical Training (CST) needs significant overhaul and reform to ensure that surgical trainees can develop a solid foundation in basic surgical training allowing trainees to enter higher surgical training with a solid foundation through which to acquire advanced skills:
  - The JCST Quality Indicators (QI's) for CST provide a good starting point for ensuring that CSTs can access a variety of training opportunities with consultant delivered training augmented by simulation and other training modalities.
  - Low complexity high volume cases carried out in elective hubs are prime CST training opportunities and CST trainees should be supported to ensure they are able to access these on a regular basis.
  - The development of CST rotas must consider the QI's and be built to accommodate them.
- The balance between service provision and education needs to fundamentally shift to allow trainees to make the most of their training time.
- The reliance on post-CCT fellowships to achieve higher surgical training competencies reflects a failure of the current training mechanisms to deliver meaningful training opportunities.
  - This will only be achieved if training activity is appropriately incentivised which is discussed in further detail below.
- There needs to be greater coherence between the needs of the population and the surgical training curriculum to ensure that trainees who CCT are equipped with the appropriate skills to obtain consultant jobs without the need for multiple fellowships.

2.4.2 Accessing outsourced surgical opportunities

With the significant current and planned increase in outsourcing further surgical care to independent providers and surgical hubs, there needs to be a fundamental shift in allowing trainees to be able to access these training opportunities.

Proposed reforms to achieve the above include:

Mandatory training participation:

- Training must be a contractual requirement for independent providers delivering outsourced NHS care.

National framework for independent sector training:

- Independent providers have shown willingness to engage with training, as evidenced by the Independent Healthcare Providers Network agreement with CoPSS and HEE[53]. A national framework should be developed, setting out principles at local level for how trainees can access operating opportunities outside NHS trusts.
- Access to independent sector lists and surgical hubs should be incorporated into JCST QI's, ensuring all curriculum requirements are adequately covered.

Administrative streamlining:

- Introduce a digital training passport linking curricula, training metrics, and administrative requirements such as contracts, checks, and ID. (Expanded further in the next section.)
- Establish streamlined honorary contracts linked to deaneries and lead employer models, allowing swift trainee access to independent facilities while reducing bureaucracy.
- Clarify indemnity requirements and provide clear support for trainees in securing appropriate cover.

Embedding training within the GIRFT hub accreditation scheme:

- New hubs should be required to explicitly outline how they will support surgical training as part of their approval process.
- This should include the JCST QI's on Training, which provide specialty specific guidance on how the training curriculum can be achieved.

Changes to rostering:

- Trainees should be allocated protected rota time to undertake operating within independent sector facilities and surgical hubs.
- Surgical hub operating should be aligned with specific training blocks or curriculum outcomes, providing concentrated elective experience to accelerate the acquisition of key skills.

Dedicated training lists within surgical hubs:

- Identify and protect specific training lists that comply with GIRFT and British Association of Day Surgery standards.
- These should be supported by structured educational team briefs, protected training time, and senior trainee mentoring programmes.

Embedding training within independent sector provision and surgical hubs is essential to safeguarding the future surgical workforce. Surgical trainees are an overlooked resource in helping reduce waiting lists, positively contribute to surgical outcomes and benefit from greater access to surgical training. By mandating participation, streamlining access, and protecting training opportunities, these reforms ensure that service expansion goes together with high-quality education - ultimately benefiting patients, trainees, and the NHS alike.

2.4.3 National Surgical Trainee Passport

Surgical trainees report difficulties in accessing opportunities that will allow them to be competent in all parts of the surgical curriculum. This is driven not only by service pressures but also centralisation of surgical services, reduction in volume of cases due to medical advances and caseloads being shifted to elective hubs or the independent sector, further putting them outside the grasp of surgical trainees.

A proposed solution to this is that trainees are placed where the cases are happening based on their needs.

> ***"The creation of a national surgical trainee "passport" which amalgamates the curriculum, skills assessment (ISCP) and the elogbook into a single accessible tool.***

It would function both as a real-time tracker of progress and a flexible roadmap for addressing training gaps, allowing seamless movement across training centres, independent sector facilities and surgical hubs nationally to optimize learning opportunities.

The key components of such an initiative would include:

- Elogbook integration with automatic cross referencing against curriculum requirements allowing immediate visibility of progress.
- Curriculum mapping along with the fundamental concept of a modular concept of curriculum that aligns closely with proposed rotations within surgical training.
- Cross centre training flexibility - Transparent recognition of skills and experiences, allowing trainees to address curriculum gaps at different training centres.
    - These must follow the principles of educational flexibility and respect the trainee-trainer relationship. Rotations should not be mandatory and should strike a balance between educational need and a trainee's personal circumstances.
- Access to high volume and high complexity centres to allow all trainees equitable access to these cases to allow them to develop into safe and competent "day one" consultants.

2.4.4 Prioritising Training on Par with Service Provision

Surgical training must be elevated to the same level of importance as service delivery within the NHS. This can be achieved by creating additional elective surgery capacity through the expansion of surgical hubs and greater use of the independent sector. Crucially, trainee involvement should be a condition of NHS contracting with independent providers to ensure that training opportunities are not lost.

Trusts should also implement dedicated "training lists," where procedures are scheduled specifically for trainees to perform under supervision. Although this may be less efficient than a consultant operating alone, trusts should receive the same financial reimbursement, recognising the long-term value of hands-on training.

Expanding on the above, a training tariff needs to be created. This tariff directly reimburses trusts for activities, particularly operations, where a trainee has undertaken part or all the operation. This incentivises training, allows for training cases to be appropriately remunerated and supports ongoing training activity and resources.

Investment in simulation training is another essential component, offering a controlled environment to develop technical skills. However, simulations should be seen as complementary, not a substitute - for in-theatre experience. Their real value lies in enhancing the educational quality of actual operative time.

2.4.5 Increasing Accountability for Training: Training Dashboards

> ***There needs to be a mechanism where trusts and national bodies are held accountable for poor training delivery.***

We propose the creation of a "Training GIRFT" initiative, an adaptation of the successful Getting It Right First Time (GIRFT) model to drive improvements in surgical training across NHS trusts. By using existing training data, benchmarking performance, and linking training quality to funding and oversight, this initiative aims to ensure a consistent, high-standard surgical training experience nationwide.

Key Objectives

1. Embed accountability for surgical training into trust-level performance management.
2. Use existing tools and data (e.g. JCST QIs, eLogbook, ISCP, ARCP outcomes) to benchmark training quality.
3. Link training outcomes to the education tariff and training post allocation.
4. Create a national atlas of variation to recognise excellence and highlight disparities.
5. Incorporate training quality into Care Quality Commission (CQC) inspections.
6. TPDs/Heads of School to be equipped with resources to provide the above data with necessary context and be able to action outcomes.

With the above, we do not want to increase burden on either trainees or trainers. No new data collection burden will be introduced with this, the initiative will rely on pre-existing data sources (ISCP, JCST QIs, national eLogbook, ARCP outcomes, GMC/JCST trainee surveys). Training performance will be measured using established standards such as the JCST QI's (e.g. number of weekly consultant-supervised sessions, operative logbook data, completion of workplace-based assessments). By speaking a language that trusts understand, we hope a Training GIRFT will incentive trusts to provide adequate provision of training as well as framing training as an organisational performance and workforce issue, not just an educational one.

The benefits of the above are multiple. By providing a blueprint for consistent training, we hope to increase the overall quality of training across the NHS. This leads to more efficient use of the training tariff, improving morale and retention of staff. Furthermore, using the existing mechanisms of GIRFT, trusts can share solutions and best practices allowing training across the entirety of the NHS to improve. A Training GIRFT initiative offers a powerful mechanism to embed surgical training into the core business of NHS trusts. By speaking the language of data, finance, and quality improvement, it can align clinical excellence with the development of the future surgical workforce.

2.4.6 Preparing Trainees for Independent Practice

As part of the surgical training pathway, there must be structured preparation for the transition to leadership and consultancy roles. Training should include core non-clinical competencies such as NHS management structures, healthcare finance, and preparation for consultant interviews. These elements help bridge the gap between training and independent practice.

Trainees should also be supported to act up or shadow consultants, gaining real-world insight into the role. Structured mentorship programmes, where senior trainees are paired with experienced consultants, can provide valuable guidance on non-clinical challenges, such as managing complications, navigating litigation, and responding to serious incidents. These should form key parts of the surgical curriculum and actively incorporated into the workplace as opposed to being outsourced to expensive courses.

2.4.7 Aligning Training with Future Population Needs

To serve the evolving needs of the population, future surgeons must have an adaptable skill set that balances both generalist and subspecialist competencies. While training must ensure the development of safe and competent generalist surgeons, this should not come at the expense of deep subspecialty expertise. Training opportunities both during training and beyond must exist to allow surgeons to develop subspecialist skills based on the demands of their departments and the surgeons' personal interests. Trained sub specialists provide a valuable asset to generalists and can help create an experienced, multi-faceted emergency surgery team.

Consultant job advertisements, contracts and job plans should reflect this dual need. They must support the development of generalist capabilities while also providing flexibility post-CCT for surgeons to pursue additional subspecialty skills aligned with their personal interests and the needs of their departments. Supported training and time for this as consultant surgeons is paramount to allow a surgeon to develop their skills in tandem with the needs of their patients and the region they work in. This balanced approach will produce a workforce capable of delivering high-quality, patient-centred care across a wide spectrum of clinical scenarios.

2.5 Strengthening the Educator Workforce

2.5.1 Equating Education with Service Provision

> ***Educators and education must be given the same priority as clinical service delivery.***

Until NHS trusts fully appreciate the financial and long-term benefits of robust training mechanisms, meaningful improvements in training quality are unlikely to occur. Surgical training should not be seen as a secondary activity but as an essential investment in the sustainability and effectiveness of the healthcare workforce.

2.5.2 Protected Time and Institutional Accountability

A critical first step is ensuring that consultants' job plans include adequate, protected time for training responsibilities - and, importantly, that this time is consistently honoured in practice. Trust management and clinical directors must be held accountable for facilitating this through mechanisms such as education quality ratings or funding incentives. Education must be elevated to the same priority level as patient safety within Care Quality Commission (CQC) evaluations to ensure it receives appropriate attention and resources.

Furthermore, Professional Activities (PAs) must be expanded and protected for education which cannot be viewed as secondary to clinical activity. Appropriate financial and non-financial incentivisation of educators activity is paramount to ensuring our educators continue to engage meaningfully with training without undergoing the risk of significant burnout to themselves.

2.5.3 Training the Trainers

The effectiveness of teaching improves when educators are equipped with formal training themselves. Courses in adult education methods, feedback delivery, and coaching, many of which are available through deaneries and Royal Colleges should be widely offered and encouraged. Developing formal roles for Professional Clinical Educators, where doctors dedicate most of their time to teaching, could further elevate the status and quality of medical education.

2.5.4 Leveraging the Full Educational Workforce

Expanding educator capacity can also be achieved through strategic use of near peers. Senior trainees or post-CCT fellows can take on structured teaching responsibilities, for example, registrars leading sessions for foundation doctors. These must be implemented with adequate support, time and compensation for individuals willing to undertake this. This not only supports junior trainees but also helps senior trainees develop their own teaching skills. Some specialties have already adopted this approach through roles like Associate College Tutors, where trainees help coordinate education alongside consultants.

Additionally, Emeritus Doctors, consultants who retire and return, represent a valuable and underutilised teaching resource that can support the current educator workforce. Their utilisation provides a valuable stock of experienced educators who with the appropriate support can provide exceptional training opportunities for resident doctors.

2.5.5 Technology and Innovation in Education Delivery

The smart integration of technology offers another avenue for boosting educator capacity. High quality e-learning modules and online assessment tools can manage standardised teaching content, freeing up time for educators to focus on higher order skills and feedback. This blended approach enhances efficiency without sacrificing educational quality. The quality of these electronic resources needs to be assured once again by educators who have been given the appropriate support mechanisms to undertake this activity. Furthermore, e-learning should not be expanded in such a prohibitive manner that it proves onerous, of poor educational value and substitutes face to face teaching opportunities. The expansion of e-learning needs to consider the time to complete these, including protected time within rotas to allow trainees to meaningfully engage with these initiatives.

2.5.6 Succession Planning and Long-Term Vision

With a significant portion of the current educator workforce approaching retirement, succession planning is vital. Identifying mid-career clinicians with an interest in education and supporting their development into leadership roles will ensure continuity. One initiative is the concept of a “teaching fellowship” for consultants, dedicated time away from clinical duties to focus on educational development and leadership. This not only builds a skilled pipeline of trainers but also helps embed education more firmly within the work practices of a trust. Educators should not be limited to universities as they have a significant role to play within all clinical settings in postgraduate medical education.

2.5.7 Maintaining Quality and Trainee Involvement

Current mechanisms for monitoring and ensuring educational quality, such as oversight by TPDs and Heads of School, must be preserved. These roles are essential in safeguarding standards and responding to issues promptly. Crucially, trainees themselves should be involved in shaping and evaluating educational experiences, ensuring that the training system remains responsive, transparent, and accountable. This includes trainee involvement in the selection of TPDs to ensure that a holistic selection process is enacted to allow for the most appropriate candidate to be selected. These mechanisms of quality assuring training come with administrative workloads that must be appropriately supported to ensure that TPDs remain engaged with the process of mentorship and education as opposed to shouldering large administrative workloads.

By adopting a multifaceted approach that combines protected time, educator development, strategic planning, and trainee engagement, we can create a more resilient and high-quality training environment for future surgeons.

2.5.8 Creating a Culture of Respect and Learning

Every member of the surgical team and wider workplace must work towards a positive workplace environment. Only through a sustained effort by every member of the team will this outcome be achieved. This includes a firm, zero-tolerance stance toward bullying and harassment, ensuring that all staff work in a safe and supportive environment where learning is valued and protected.

Instances of bullying and harassment raised by trainees must be treated seriously and deaneries should have policies in place dealing with these issues. Furthermore, the deanery and trust mechanisms at times are disparate and don’t have aligned objectives.

The use of TPDs and Heads of School as not only quality assurances for surgical training but being adequately supported to respond to and enact positive change when trainees raise issues regarding the culture of their workplace. Greater protections must also be instituted for trainees who raise concerns about their workplace to ensure that speaking up does not equate to a loss of opportunities or further harassment.

2.5.9 Feedback and Mentorship

High-quality surgical training environments are built on consistent, meaningful feedback. Initiatives such as daily debriefs or scheduled weekly one-on-one feedback sessions between trainees and trainers help identify learning opportunities, track progress, and demonstrate that teaching is a fundamental part of clinical work. These practices not only enhance skill development but also reinforce a culture where trainees feel seen, supported, and guided. These must be recognised as essential elements of training and teaching with protected time and resources for educators and trainees to be able to meaningfully engage in these. Trainers and trainees must have built in time to their work schedule to ensure they are able to appropriately facilitate and engage with the feedback mechanisms so that they are not viewed as onerous.

2.5.10 Facilities and Resources

Trusts should provide appropriate resources, including a doctors' mess or lounge for rest and peer connection, computer access for e-learning and portfolio maintenance, simulation labs for skills practice, and access to libraries or online journals for academic study. These infrastructure elements are necessary in enabling trainees to balance clinical service with ongoing learning.

2.5.11 Addressing Workload to Protect Learning

Amidst the pressures of service provision, it is vital to preserve protected time for learning. Without it, education risks becoming secondary to service delivery. RCSEng has recommended that new surgical hubs be designed not only to increase surgical throughput but also with training as a core priority. For instance, hubs equipped with two operating rooms allow a consultant to safely supervise two trainees simultaneously enhancing capacity while maintaining training quality.

By embedding these principles - respectful leadership, structured feedback, appropriate facilities, and training-conscious service design - surgical training environments can become more sustainable, equitable, and effective.

ASiT

3. The future of surgery

Association of Surgeons in Training

asit.org

3.1 Hospital to Community

3.2 Sickness to prevention

3.3 Analogue to Digital

3.1 Hospital to Community

Historically, surgical training in the UK, like most specialty training, has been almost entirely hospital-based, reflecting where most surgery takes place. However, as the healthcare system increasingly transitions toward integrated care models, surgeons will need to interface more directly with community services. This shift is already visible in areas such as post-operative follow-up in community clinics, and the multidisciplinary management of chronic conditions.

To align training with this evolving landscape, new models and coordination efforts are needed to provide meaningful community-based placements for surgical trainees, something traditionally lacking in surgical education. These placements could include outreach surgical clinics in community hospitals or integrated care settings, offering trainees a better understanding of patient demographics, systems of care, and referral pathways.

Understanding how surgical patients enter the system is crucial. By training in referral and screening pathways, of which surgeons often only see the end point, trainees gain a broader, more holistic view of patient care. This would allow them to better appreciate the decision-making that precedes a surgical referral, improving both their clinical judgement and their communication with colleagues in primary and secondary care.

Further evidence for the growing intersection between surgery and community care is the rise of **Community Surgical Hubs**, which perform minor procedures such as cataract surgeries and skin excisions outside traditional hospital settings. Some UK regions are already adapting training to this trend by sending trainees to ambulatory surgical centres, particularly in fields like ophthalmology.

3.1.1 Proposed Reforms to Better Integrate Community and Hospital Training

To better integrate community care into surgical education, we propose the following:

- **Greater involvement in community-based clinics** that operate out of surgical hubs, especially for common surgical pathologies, allowing trainees to gain valuable experience in the outpatient management of these pathologies.
- **Protected time for attending multidisciplinary team (MDT) meetings** in community settings, particularly for conditions that involve long-term management across care boundaries. This would help hospital-based surgeons better understand the community resources available to their patients and facilitate more appropriate triaging and referrals.

These reforms would prepare surgical trainees not only for operative excellence, but also for a future in which the boundaries between hospital and community care are increasingly fluid. The outcome is a surgeon who is not only technically skilled, but also integrated into a broader, more patient-centred healthcare system. However, the above reforms must not take away from the surgical curriculum and must only be integrated once other key aspects of the curriculum have been successfully achieved.

3.2 Sickness to prevention

As the healthcare system places greater emphasis on long-term population health and preventive medicine, members of the MDT working alongside surgeons will increasingly take roles in preventive medicine. With this evolution, surgeons too must develop a broader understanding of prevention-focused strategies - particularly as they relate to surgical outcomes and long-term patient wellbeing.

However, this shift must be carefully balanced. While expanding a surgeon's knowledge of preventive medicine is important, it should not come at the expense of their core clinical and technical training. The goal is to enhance, not dilute, the surgical skillset.

One growing area of importance is **preoperative medicine and patient risk stratification.** With surgical patients becoming more complex, this aspect of care is set to become a larger and more routine part of surgical practice. Surgeons should therefore have greater access to tools, support services, and collaborative input to ensure optimal preoperative planning and shared decision-making.

3.2.1 Proposed Reforms to Embed Prevention in Surgical Education

To equip future surgeons with the necessary knowledge and skills in preventive care, several reforms are proposed:

- **Curriculum Enhancement:** Each surgical specialty curriculum should explicitly include competencies in preventative medicine. For example, surgeons should understand the epidemiology of the diseases they treat and be aware of relevant prevention strategies, such as public health campaigns around injury prevention, or how bariatric surgery fits within a wider framework of obesity and metabolic disease prevention.
- **Preventive Medicine Education:** Training programmes should offer optional courses on key topics like lifestyle medicine, behavioural change counselling, and epidemiology. These courses can provide surgeons with the foundational knowledge needed to work effectively alongside colleagues in public and community health, while also supporting their ability to guide patients through modifiable risk factors pre- and post-operatively.

By embedding these changes, surgical education can better reflect the changing nature of healthcare, where prevention and intervention go hand in hand to improve long-term outcomes for patients and populations alike.

3.3 Analogue to Digital

As the healthcare landscape evolves, modern doctors must not only be clinically competent but also digitally literate. The shift toward digital healthcare delivery, spanning electronic health records, telemedicine, AI and robotics, demands that training keeps pace. Technology is not only transforming the way care is delivered, but also how training itself is delivered and assessed. Simulation-based learning, e-learning platforms, and VR are now essential tools for preparing the future workforce.

In surgery specifically, a technological revolution is underway. Robotic-assisted procedures, augmented reality, and computer-assisted decision support are increasingly common. Yet, formal training in these areas remains inconsistent. According to HEE's Technology-Enhanced Learning (TEL) survey, while over 80% of trainees and educators agree that simulation and digital learning are essential for training, only about 50% feel they have adequate access to such resources.

The RCS England Future of Surgery: Technology Enhanced Surgical Training (FOS:TEST) Commission highlights that the UK is at a "pivotal point in the digital transformation of surgical training"[62]. While hands-on operating remains irreplaceable, emerging technologies are proving to be powerful adjuncts. For example, wearable devices and video analysis tools can enable objective skills assessments, while immersive VR platforms can supplement intraoperative learning experiences.

Evidence from urology and colorectal surgery programs shows that structured robotic training, incorporating simulators and supervised console time, not only enables trainees to perform robotic procedures safely, but also improves their confidence as they transition into consultancy roles. Furthermore, simulation-based education has strong evidence behind it. Randomised trials have shown that simulation-trained surgeons outperform traditionally trained peers in the operating room. One well-known study found that VR-trained surgeons completed laparoscopic cholecystectomies more quickly and with fewer errors than those without simulation experience[63].

3.3.1 Proposed Reforms for a Digitally Fluent Surgical Workforce

01 **Digital Literacy in Curricula:**

All training curricula are being updated to incorporate digital competencies. The FOS:TEST Commission recommends that trainees and trainers receive formal training in digital literacy, AI fundamentals, imaging diagnostics, prognostic modelling, genomics, and digital consent processes[62].

02 **Technology-Enhanced Learning (TEL):**

The principle of "training with tech to train for tech" underpins TEL reforms. Simulation centres are expanding across the UK, and the NHS Long Term Workforce Plan includes provisions for simulation kits for every training school. However, access remains uneven, regions like London have multiple centres, while others are less well equipped. The RCS has called for equitable simulation access across all regions. Simulation now encompasses VR and AR trainers for surgical skills, endoscopy, and communication tasks.

03 **Data and Analytics Training:**

As medicine becomes increasingly data-driven, doctors must understand how to interpret clinical data outputs and make data-informed decisions. Basic training in data science or clinical analytics should be available as part of broader digital skills development to those who wish to pursue it.

04 **Telemedicine and Remote Care Competence:**

As care delivery moves from analogue to digital, trainees must be equipped to conduct effective video and telephone consultations. Supervised video clinics with feedback are being introduced.

05 **Robotics and Advanced Technologies:**

Formal training pathways for robotic surgery are being developed. Bootcamps, simulator hours, and regional courses are laying the groundwork for standardised robotic training across specialties[64]. These formal training pathways will ensure that all surgical trainees have equitable access to robotics and advanced technologies to allow them to provide the best care for patients.

06 **Digital Assessments and Portfolios:**

Training administration is also going digital. Paper logbooks are being replaced with e-portfolios featuring dashboards that allow both trainees and supervisors to track progress through metrics such as procedure counts, feedback scores, and exam performance. Emerging proposals include using AI to detect early signs of difficulty in trainees by analysing these data trends, allowing for timely and personalised support.

07 **Reducing Administrative Burden Through AI:**

Trainees face a significant administrative burden. AI tools are being explored to reduce workload by supporting documentation tasks (e.g. operation notes, discharge summaries, clinic letters). These innovations can free up valuable time for clinical training and professional development.

08 **Sustained digitisation of hospital mechanisms:**

While the above recommendations will significantly enhance the way surgeons work, fundamentally, there needs to be a national sustained movement towards the digitisation of health services in hospitals. From electronic patient notes to electronic prescribing, these need to be the norm. Digitisation of services directly improves patient care, gives trainees greater and more efficient access to patient information and ultimately leads to improved training and better patient care.

In summary, the digital transformation of surgical training is no longer optional - it is essential. Embracing technology across the curriculum, training delivery, and assessment processes will ensure that tomorrow's surgeons are equipped for a healthcare system that is increasingly defined by innovation, integration, and intelligent data use.

ASiT

4. The Future Surgeon

Association of Surgeons in Training

asit.org

4.1 The Surgeon as an Academic

4.2 The Surgeon as a Leader

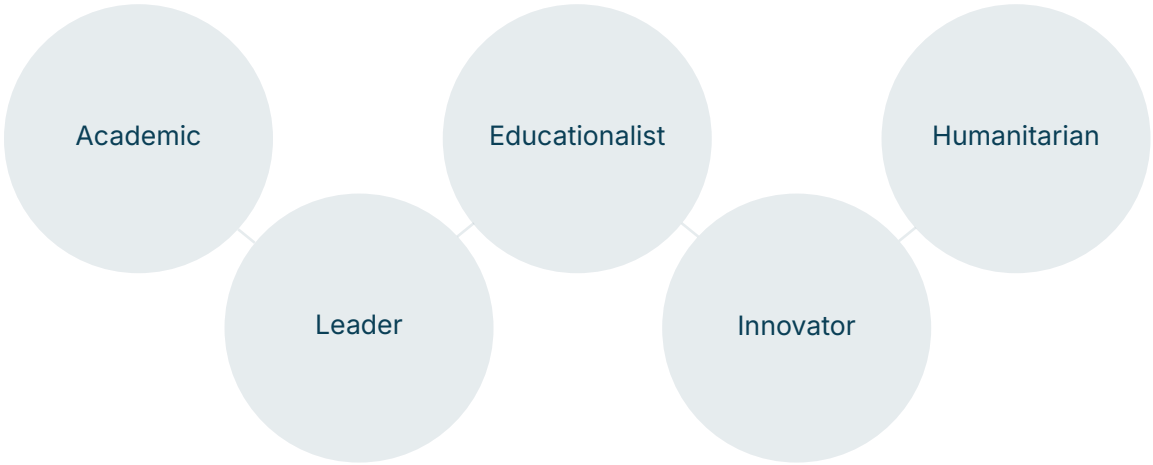
4.3 The Surgeon as an Educationalist

4.4 The Surgeon as an Innovator

4.5 The Surgeon as a Humanitarian

Technical proficiency and operative skill are no longer the sole requirements of the future surgeon. There exist a plethora of additional activities that surgeons undertake which ultimately enhance the care they provide and help improve patient outcomes.

Common portfolio pathways undertaken by surgeons as mentioned earlier include the surgeon as a:



Earlier in the report we reviewed the common issues with the above pathways and the barriers trainees face in pursuing additional portfolio pathways. Trainees develop significant additional skills when pursuing portfolio activities and these bring significant benefit to the trusts they work with and the patients they care for. Below we provide an overview of the benefits of portfolio activities and initiatives to help trainees access these pathways.

4.1 The Surgeon as an Academic

The UK is a historic leader in the practice of clinical and academic surgery. Whilst times have changed since the days of Hunter and Moynihan, there remains a passion for this evidenced by multiple clinical societies focused on research. This represents the most well-trodden path of additional activity beyond clinical activity, however there exist significant barriers into the effective implementation of an integrated academic training pathway. Despite the barriers, academic training alongside surgical training has proven benefits to both the NHS and patient outcomes.

4.1.1 Benefits of Integrated Academic Training Pathways

Creation of a sustainable pipe-line of surgeon scientists:

- These pipelines help produce clinician-scientists who are vital for advancing surgical research which directly translates to improved patient care and outcomes[23].
- Academic surgeons play a crucial role in driving innovation and translating research into direct patient benefit within the NHS. The UK government is actively working to make the UK a global leader in clinical trials by streamlining processes, boosting innovation, and prioritizing patient-centered research.
- Having structured pathways helps sustain this pipeline for a sustainable future of surgery.

Facilitation of higher research qualifications:

- Integrated academic schemes have shown a consistent facilitation of trainees accessing higher research qualifications when compared to their colleagues outside these schemes purely in clinical practice[65].
- ACF participation significantly increases the likelihood of securing externally funded PHd scholarships as well as research grants[65].
- Local education and training boards (LETBs) should have clear pathways and case examples that highlight the routes trainees can take to access a higher degree along with a list of potential members/supervisors.

Career progression and retention in academia:

- Majority of surgical trainees who enter integrated academic training posts go on to complete higher degrees and move into academic roles.
- Vast majority of ACFs from 2006 - 2017 obtained PhDs, higher degrees and were actively involved in translational or clinical research through their careers[65]
- Integrated training has benefits to retaining, upskilling the academic surgeon workforce.

Skill development and job satisfaction:

- Skills gained during integrated academic training pathways are highly desirable in subsequent career development[65].
- Morale and satisfaction amongst the group undertaking integrated academic training remains high, leading to higher retention rates amongst the clinical workforce[24].

4.1.2 Recommendations to improve integrated academic training for surgeons

Guarantee and protect research time:

- Research time should not be eroded by clinical activities. Formalisation of this research time is paramount and this can be achieved by ensuring separate contractual arrangements with higher education institutes are in place so that trainees are able to avail this time without clinical pressures[66].
- Academic trainees where possible should have supernumerary status to allow them to not be constantly pulled from academic activities[24].

Strengthen academic supervision and mentorship:

- Similar to the Educational/Clinical Supervisor system, every academic trainee should have a named academic supervisor and an “academic” training programme director to over the progress of academic trainees within a deanery[66].
- Formal mentorship schemes or networks created within existing bodies such as the NIHR/Wellcome Trust will allow early stage academics the access to supported and formal mentorship to develop their portfolios to successfully apply for integrated academic training[23].

Integration of academic progress into training assessments:

- Work undertaken by academic trainees as part of their integrated training needs to be formally recognised at ARCPs and integrated into the overall framework for the assessment of trainees[23].
- All academic trainees must have an annual academic ARCP with academic panel members and this data should be collected and fed into a national audit database to quality assure academic training nationally[66].
- Clear national guidelines are required to ensure the success of academic ARCPs, akin to training ARCPs that take place[66].

Improving diversity within academic training pathways:

- Alongside ACF/ACL mechanisms, quality assurance mechanisms need to be developed for locally funded research fellow posts that provide structured research time to trainees[23].
- Ensuring posts are available in a variety of sub-specialties and a variety of geographical regions allows academic training to become more accessible to a wider range of trainees.
- Improving outreach and support for underrepresented groups in surgery are a priority to help broaden the academic surgeon pathway and make the group more representative of the medical population.

Cultural shift:

- Research forms a key pillar of clinical governance and trusts need to move away from the understanding that research is a luxury but rather a necessity.
- Cultivating an environment where academic research is celebrated, appropriately recognised and supported leads to net benefits for both clinical trusts and academic institutions.

Financial support and resources:

- Increasing numbers of trainees are undertaking research activity within their own time and at their own expense.
- National bodies need to expand the role of short-term grants and fellowships to support trainees to undertake preliminary work that they can use to achieve success in integrated academic training recruitment, securing doctoral fellowships and post-doctoral funding.
- Alongside funding, trusts and universities need to provide academic trainees practical resources such as office space, access to local research facilities and a clearly defined budget for academic activities such as conference and travel[66].
- Reducing out of pocket expenses makes academic training more accessible to a diverse group of trainees.

Enhanced coordination between clinical and academic training:

- Both aspects of the integrated training pathway need to work in tandem to ensure maximal benefit not only for the trainee but the clinical trust and academic institution.
- Clinical trusts need to allow a degree of flexibility within rota patterns and management to allow academic trainees to undertake high quality academic training.
- Furthermore, return to clinical activity after dedicated blocks of research needs to be adequately supported, allowing for a return to training period to be implemented should the trainee choose so[66].
- Involvement of both training programme directors and academic supervisors in helping plan rotations ensures that neither component (academic nor clinical) unduly compromises the other.

The above recommendations are derived from previous ASiT work looking to establish academic quality indicators (AQIs)[66]. These AQIs provide a robust roadmap for pan-specialty pan-grade robust integrated academic training pathways, and we recommend that these be adopted alongside the existing JCST Quality Indicators for training. This allows trainees and trainers access to the appropriate mechanisms to advocate for high quality integrated academic training pathways.

4.2 The Surgeon as a Leader

> Leadership and management are key skills expected of all surgeons in a variety of settings yet access to formalised training remains patchy. Surgeons increasingly undertake work in advocacy via Royal Colleges, trade unions and Specialty Associations. This represents an asset to the NHS as clinical leaders can prove to be transformative for service delivery and in turn, patient outcomes.

4.2.1 Positives of leadership and management skills development

Improved team functioning and patient care:

- Leadership training helps surgeons develop non-technical skills such as communication, team building, self-awareness all which go on to complement surgical skills[67].
- Strong surgical leadership is associated with improved patient safety, higher quality patient care and better clinical outcomes[68].

Career advancement and readiness for senior roles:

- Prior experience in leadership roles is viewed favorably when applying for consultant jobs or academic and NHS leadership positions.
- Leadership training gives trainees more confidence to step up as a leader and gives broader perspectives on healthcare organisations and strategy[67]. All of this allow for a better transition into the consultant role, contribute to service leadership and makes them more effective clinical leaders from the offset.

Successful quality improvement and innovation:

- Leadership training often involves change management, systems thinking and project management skills, enabling trainees to identify problems in their service and implement solutions to deal with these problems.
- Even at a small scale, this can drive significant change for patient pathways making them safer and more efficient
- Involvement in leadership from an early stage ensures that frontline clinicians are stakeholders in hospital management and innovation. This creates a culture of continuous innovation and improvement which becomes embedded as a part of daily clinical practice.

Enhanced team morale and reduced burnout:

- Developing leadership and interpersonal skills helps improve workplace cultures and personal resilience.
- Engaging in leadership activities allows trainees to learn about inclusive leadership, emotional intelligence and managing conflict, better equipping them to build more supportive, respectful team environments.
- Evidence suggests that dedicated leadership training may mitigate burnout in trainees by improving sense of control and efficacy in the workplace[67].
    - By learning strategies for delegation, time management and collaborative working, surgical trainees are better able to balance demands and avoid feelings of being overwhelmed.

4.2.2 Recommendations to improve leadership training access and culture

Integration of leadership into surgical curricula:

- Leadership and management experience needs to be formally embedded and assessed as part of surgical training to ensure that this does not just become a tick box exercise.
- Understanding that not everyone will engage with leadership activity but expanding the definition of leadership so that trainees who do engage in aspects of leadership activity are recognised for doing so and given opportunities to progress should they choose.
- These curricula outcomes need to be matched with NHS Leadership Academy models so that there is a homogenous national framework on how leadership is assessed and developed, allowing trainees who are interested to easily undertake formal leadership trainees and recognise their past experience in leadership in a systematic and equitable fashion.

Evaluating rotational training and its impact on continuity:

- Respecting the trainee-trainer relationship, if a trainee is undertaking ongoing clinical improvement and innovation their rotations should take this into account and allow for longer rotations in clinical placements if beneficial to their overall training.

Normalise and reward leadership activities:

- Leadership needs to be seen as integral to being a good surgeon and not an optional extra.
- Trainees taking initiative in leadership activities should be recognised – this could be recognised in ARCP outcomes and commented on in CCT outcomes.
- This provides positive reinforcement, encouraging trainees to continue engaging in leadership activities and allows others to engage as well[25].

Provide early and ongoing opportunities:

- These opportunities should start with foundation training and continue throughout.
- These can include foundation doctors getting involved in small projects which they then are given the opportunity to build on as training progresses.
  - These processes should be supported with appropriate supervision and if necessary appropriate time to be built into rotas to allow doctors to undertake this time in work hours.
- Leadership awareness should be integrated into medical school curricula and the role of leadership in clinical practice along with practical examples should be provided from an early stage, helping encourage participation[25,26].
- Access to opportunities should include invitational involvement of trainees in service improvement committees and initiatives that the trust may be undertaking.

Training the trainers:

- We need to train the trainers in leadership - consultants and surgical ecucators should be exposed to leadership development so that they can identify trainees who would benefit from additional leadership training.
- Mentorship programmes should exist like the NHS National Medical Directors Clinical Fellow Scheme on a regional and local level;
  - This allows developing trainees interested in leadership access to guidance and role modelling.
- Investing in faculty development creates succession planning for senior leadership, creating a pool of interested and supportive supervisors catering for the next generation of interested trainees coming through.

Improving access through funding and flexible training:

- Widening access can only be achieved if the financial and time barriers are addressed.
- Study leave budgets should cover high quality leadership programmes such as those offered by the NHS Leadership Academy, encouraging trainees who are eligible to undertake these formal opportunities for further development of their leadership.
- Trainees should have access to out of programme leadership fellowships or part-time fellowships agreed with their trainers and with minimal logistical hassle or hurdles. The current issues exist around accessing these opportunities and a smooth reintegration to training after completion of these opportunities[26].

Inclusive and diverse leadership:

- Leadership development must actively include historically under-represented groups in leadership roles such as women and minority ethnic trainees.
- Examples of this include the RCS England Emerging Leaders Programme but need to be expanded and advertised further to ensure we are reaching the groups. You can't be what you can't see.
- Inclusive cultures need to be encouraged as they broaden the talent pool for future surgical leaders and improves team dynamics and patient care.

National coordination and resource sharing:

- A system wide strategy is needed to coordinate leadership training for all trainees.
- Currently there exist silos of leadership training which in part contribute to the heterogenous access to leadership opportunities nationally.
- A central strategy that incorporates NHS Leadership Academy, Faculty of Medical Leadership and Management and the relevant Royal Colleges is needed to help develop a common framework and repository of resources.
- Such collaboration avoids re-inventing the wheel, keeps costs manageable and allows for a national standard against which leadership can be assessed and recognised for all trainees.

4.3 The Surgeon as an Educationalist

> Education is a key tenet of being a surgeon, with all surgeons of all grades being involved in education of some variety or scope. Some of our colleagues are involved in the key delivery of formal education initiatives ranging from medical school to theatre education and their achievements must be recognised and supported. Here we discuss potential benefits of this approach and some practical solutions to improving this.

4.3.1 Positive impacts of developing surgical education skills

Mutual benefit to teachers and learners:

- Whenever surgical trainees engage in teaching, irrespective of size, modality or setting, there is mutual benefit to both parties involved[69].
- These are transferable skills such as teamwork, delegation, organisation which will directly translate to surgical care.

Professional satisfaction and reduced burnout:

- Taking on educator roles such as supervising medical students or running skills workshops adds sense of professional satisfaction alongside clinical work.
- Engaging in education also provides variety in day-to-day clinical practice which is in itself a protective factor against burnout.
- Developing as an educator contributes to personal and professional gorwth, cultivating communication, empathy and reflection which are protective against burnout.

Enhanced training culture and learning environment:

- Fostering education contributes to a positive learning culture, which improves training quality and ultimately patient care.
- Good training and good service provision go hand in hand and are not disparate[28]. Trainees in environments where there is a positive learning culture feel respected and supported which boosts morale and helps them progress.
- Investing in surgical education skills contributes to a learning organisation where everyone from medical students to consultants engage in ongoing teaching and learning elevating the standard of care provided[28].

Career development and leadership opportunities:

- Cultivating surgical education skills can significantly boost a trainee's career prospects. There is greater focus being placed on teaching, formal qualifications in teaching in surgical recruitment metrics for example.
- Trainees engaged with education throughout their training are well placed by building strong education portfolios to be future TPDs, college tutors or university linked teaching, educational/ clinical supervisors. There exist professional organisations that provide recognition for teaching carried out by trainees such as the Faculty of Surgical trainers in RCSEd but these can be expanded further so trainees are able to gain recognition for their teaching achievements.

System wide benefits:

- Effective surgical educators train more competent surgeons who then go on to carry on the effective surgical education that they have received themselves, creating a positive feedback loop.
- Focusing on training today and those who train, is vital to ensure there is a sustainable workforce tomorrow.
- We must not only produce surgeons who can operate but those who can train others, innovate and adapt to new techniques within education.
- Patients benefit from a surgical workforce that is adept at teaching and learning – such teams are more likely to adopt best practices, maintain competencies and provide high quality safe care[28].

Sustainable workforce:

- By encouraging trainees to engage in the process to become educationalists we also start succession planning for the future educator workforce. With the NHS 10 Year Plan increasing the number of medical school places and postgraduate medical training places, we need educators who are trained and available to train the increased cohort of doctors.
- Without these trainees who come through and are interested in being educationalists, we will see a crisis in the workforce meaning future doctors are further stretched when it comes to accessing training opportunities.

4.3.2 Recommendations to improve access, visibility and integration of Education Training

Embed education training in surgical curricula:

- Courses such as "Train the Trainer" or PGCerts in Medical Education should be available within the curriculum for those interested in undertaking further training in becoming an educationalist.
- Work based assessments on teaching should not be viewed as a tick box exercise and can be used towards further qualifications achieved in medical education. This normalises the role of education in surgical training and does not unfairly disadvantage those who want to pursue surgical education.

Provide protected time and supervisor support:

- There needs to be protected time for the delivery and engagement of education within surgical training – this can be small from regular rota'd departmental teaching days where trainees can teach or out of programme experiences to develop further skills as an educationalist.
- The commitment to training "is more than the current allocation of time in the average job plan" and must be facilitated with proper time and even remuneration[28].
- This was being argued all the way back in 2010, by the Temple Report. There needs to be a fundamental rebalance in service provision and training provisions so that we may achieve training competencies and the opportunities lost in training. This includes consultant trainers as well – those who are engaged in the activity of training us need to have their time honoured, protected and renumerated in order for the system to work.

Financial and logistical support for qualifications:

- Lower financial barriers along with allowing for greater access via study budgets and leave to access formal medical education qualification for interested trainees. These budgets should extend to covering modules for PGCerts as is the case in certain regions.
- By investing in surgical education and the development of surgical educators we allow for a sustainable pipeline of educators who can engage with and provide the next generation of incoming surgeons with the training and education they need.
- The NHS gains in the long term - it gains a surgical educator workforce that exists to allow it to train more surgeons and ensure that the surgeons being trained in the system are being done so with the latest and most innovative teaching techniques.

Cultural shifts:

- Systemic culture shift is needed where teaching and training are no longer viewed as secondary to service but integral to it. This requires leadership and culture change from top bodies such as GMC, NHS England and the Royal Colleges.
- This includes prioritising and honouring time for consultant trainers to be able to deliver the teaching and training components of their job plans. Training and education achievements should be rewarded and celebrated, with awards such as the Silver Awards being used to help negotiate job planning.

Expand simulation and education fellowships:

- These need to be expanded in a collaborative and national manner so that areas of abundance can share their expertise with trainees on a national scale.
- By pooling together resources, we may be able to reduce the net cost of running and funding these fellowships, further reducing the financial burden of undertaking these fellowships. Standardisation also allows for quality assurance and that time spent in education fellowship counts towards training.

Mentoring and communities of practice:

- There is a need for mentorship schemes not just for trainees wishing to pursue career paths as an educationalist but all surgical trainees should have access to high quality mentorship to allow them to unlock most of their potential and have a fulfilling career.
- The creation of a pool of surgical educationalists who would mentor future educationalists is vital in ensuring that those surgical trainees interested in surgical education have a viable track record to pursue a career in education alongside surgery.
- Alongside one to one mentoring there is the need to create communities of practice that share practices nationally - this demystifies the path to becoming a surgical educationalist but also helps sustain engagement.

Leveraging technology and innovation in education:

- Modern tools can be used to help both improve training but also create new roles within surgical education for trainees.
- Technologies such as simulation and digital learning platforms are growing at an exponential rate and require investment not just financially but from a human resource perspective as well.
- Innovation within the education space should be encouraged and supported, putting trainees front and centre at the development of future methods of teaching that will significantly improve the education experience for all involved.
- Trainees wishing to undertake formal research in surgical education should be supported and mentored; national organisations such as NIHR need to realise the signifcant importance of effective surgical education and its impact on patient care.

Flexible training pathways for educator development:

- Like research and other pathways, those trainees wishing to pursue further training in surgical education should be afforded these opportunities with minimal logistical hurdles.
- There need to be national guidelines on OOP experiences in education which allow trainees who are interested to undertake an intense period of training in education with standardised outcome measures.
- Besides structured OOP experiences, greater emphasis needs to be placed on supported split clinical and education roles that allow trainees to maintain clinical practice but still have protected time to undertake further training in education. These can be formal rotations in units or trusts that have extensive teaching facilities or attachments to regional universities allowing all trainees the opportunity to upskill their education skills.

In short, today's trainees should be given every opportunity to become tomorrow's effective surgical teachers - this is an investment in the future of the profession.

4.4 The Surgeon as an Innovator

> Innovation in surgery has a proud history but as we expand the definition of innovation, surgeons and specifically trainees need to be involved in innovation from an early stage. Innovation is not just about the use of cutting-edge technology but involves a skillset to effectively understand and leverage emerging technologies to provide better patient care. This is a rapidly evolving space and a clear understanding of the opportunities available to trainees is needed in order to support surgeons to pursue innovation as part of their portfolio.

4.4.1 Benefits of cultivating Innovation Skills in Surgery

Improved patient care and service transformation:

- Innovative solutions designed to specifically address a service need can lead to tangible improvements in patient outcomes and service efficiency.
- Novel devices and technologies can enhance surgical precision, reduce complications and lower costs[31]. NHS supported innovation projects outlined in the NIHR i4i report have gone from concepts to clinical trials to achieving adoption within the NHS.
- Trainees work and operate at the coalface - therefore are best placed to drive forward innovation and development of new technologies that can directly address the needs of our patients.

Research and technology development:

- Through engaging with innovation mechanisms both formally and informally, trainees gain vital skills in innovation, research, navigating the MedTech world and developing key leadership and management skills.
- All these advancements add to the surgical armamentarium - instruments, technologies or digital solutions tailored to specific clinical needs.
- The introduction and expansion of surgical hackathon style events in the UK have helped to not only get trainees involved in creative problem solving and developing innovation skills but also improve their confidence in approaching innovation challenges[30,70].

Enhanced career development and retention:

- Cultivating innovative skills makes trainees more well-rounded surgeons and future leaders. Engaging with innovation, trainees gain skills in leadership, teamwork with engineers/industry and navigating the business aspects of healthcare.
- The NHS Clinical Entrepreneur Programme is one example of this programme which has provided entrepreneurial training for a variety of NHS staff.
  - This not only helps develop ideas into products but also promotes the idea of “intrapreneurship” within the NHS.
  - Early evidence shows the formal pursuit of innovation can improve job satisfaction and retention within the NHS[71].
- Many surgical innovators also find that innovation experiences (e.g. leading a project or fellowship) accelerate their personal development – building skills in project management, interdisciplinary collaboration, and creative thinking that are transferable to clinical practice and leadership roles[23].

4.4.2 Recommendations to develop Surgical Trainee Innovators

Improve understanding of innovation needs:

- The concept of innovation within healthcare is broad and interpreted in various ways. To successfully integrate innovation within training pathways, we first need to understand what trainees' needs are and how this aligns with existing activity.
- Innovation is no longer limited to entrepreneurship or MedTech. Whilst an important part of surgical innovation, opportunities have expanded to include:
  - Intrapreneurship within the NHS: roles that harness the experience and expertise of individuals who understand the technological landscape and help drive innovation solutions to the clinical frontline.
  - Industry collaboration: surgeons who combine clinical practice with defined consultancy roles in industry, contributing to the development of future technologies that will shape NHS practice.
- By mapping current activity and listening to what trainees identify as their key needs, we can design training pathways that embed innovation in a meaningful and sustainable way.

Strengthening mentorship and networks:

- There needs to be an expansion in established hubs that link together experienced mentors, industry partners and like-minded peers. An example of this is the RCSEng Innovation Hub (i-Hub) which aims to link surgeons with experts in industry and provide advice.
- Hospitals can designate innovation champions within their regions so that trainees have access to local and regional mentorship to help trainees along their journey of innovation.
- Similarly to academia and education, by building a community of practice, trainees can share experiences, find collaborators and navigate hurdles with guidance. This active mentorship will help trainees overcome isolation and uncertainty that many first-time innovators face.

Integrate innovation into training pathways:

- There should be formal integration of innovation training at multiple stages of surgical curriculum and education.
- This can vary from medical school modules on healthcare technology and innovation to fellowships/structured programmes out of training to gain a more in-depth understanding of these concepts.
- The proposed Integrated Innovation Training Pathway outlines key intervention points to teach innovation skills from university and throughout surgical training[30].

Protected time and funding for innovation:

- The acquisition of innovation skills needs to be treated in the same manner as academia - trainees should be able to access dedicated opportunities to work on innovation without compromising either their training or personal time.
- There should be an exapnsion in access to MedTech innovation fellowships or incubator posts allowing a wider range of surgical trainees to access these opportunities.
- Access to innovation skills training and courses should become a part of the study leave and budget, allowing trainees seamless access to these opportunities akin to their academic, leadership and educationalist colleagues. Reducing financial barriers is crucial so that interested trainees can partake in innovation skills acquisition without shouldering the financial burden themselves.

Fostering a pro-innovation culture and incentives:

- Innovation should be actively encouraged as a valued component of clinical excellence.
- A change in culture requires recognition and rewarding innovation activities:
  - Most importantly, innovation activity should be recognised in ARCPs and CCT requirements.
  - This requires clear standards for the assessment and accreditation of innovation work[23].
- Culturally departments should change their views on innovation – promotion of psychological safety for trying out news ideas and recognising that a failed idea is a valuable learning opportunity and not to be treated punitively.
- Innovation metrics should be developed, recognised and celebrated particularly in trusts where there is a large amount of it happening. Tying in innovation metrics to organisational performance highlights the organisational value of encouraging innovation within hospitals.
- Lastly, reducing bureaucratic friction in processes such as research ethics and procurement would empower trainees to move innovative solutions faster.

Flexible training pathways for educator development:

- Like research and other pathways, those trainees wishing to pursue further training in surgical education should be afforded these opportunities with minimal logistical hurdles.
- There need to be national guidelines on OOP experiences in education which allow trainees who are interested to undertake an intense period of training in education with standardised outcome measures.
- Besides structured OOP experiences, greater emphasis needs to be placed on supported split clinical and education roles that allow trainees to maintain clinical practice but still have protected time to undertake further training in education. These can be formal rotations in units or trusts that have extensive teaching facilities or attachments to regional universities allowing all trainees the opportunity to upskill their education skills.

Leveraging existing innovation programmes:

- Surgical trainees should be supported to utilise existing innovation ecosystems such as the NHS Clinical Entrepreneur Programme, NIHR i4i Programme and the NHS Innovation Accelerator.
- The development of surgery specific programmes such as the RCSEng National Surgical Innovation Fellowship provide surgical trainees with tailored and bespoke opportunities to develop surgery adjacent innovation skills.
- Alongside national programmes, we must recognise and support regional centres of excellence that offer innovation training to surgeons. Examples of these include the BHT Clinical Innovation Fellowship[72].
- These programmes should be highlighted and incorporated into the variety of options available to trainees to improve their portfolio interests outside of clinical training.
- Connecting trainees with local Academic Health Science Networks or Health Innovation Network further allows trainees access to the rich innovation ecosystem that already exists[71].
- By creating clear signposts and support for engaging with such programs, linking regional and national initiatives; we can ensure budding surgical innovators find the right pathways to develop and spread their ideas for the benefit of patients and the health system.

4.5 The Surgeon as a Humanitarian

> Surgeons have always engaged in humanitarian work globally, working in a variety of austere environments providing surgical care. The conversation around the provision of humanitarian surgery has shifted significantly, from helicoptering surgeons to providing care to now focusing on initiatives that help build local capacity. However, there remains a paucity of formal training in humanitarian surgery principles and access to projects and initiatives for trainees remain poor overall.

4.5.1 Positive Impact and Benefit of pursuing humanitarian surgery

Advanced clinical skills acquisition and resourcefulness:

- By gaining experience in low resource settings, trainees can hone surgical skills and clinical acumen. Furthermore, limited diagnostics, equipment and personnel also help build decision making and improvisation skills.
- These transferrable skills are directly applicable to NHS practice, improving trainees abilities to handle emergencies and working under pressure[33].

Personal growth and resilience:

- Taking part in global health challenges helps build tremendous personal resilience and adaptability. Dealing with austere living conditions, cultural differences, ethical dilemmas, and the emotional impact of humanitarian crises often enhance one's sense of perspective, empathy and mission in medicine.
- Surveys show that volunteering abroad can boost overall job satisfaction and even reduce burnout upon return[73]. NHS employers have noted that staff with global health experience report improved morale, wellbeing and renewed motivation in their UK practice[74].

Non-technical skills, leadership and teamwork:

- Humanitarian deployments help accelerate the development of soft skills which can provide significant benefit to NHS practice.
- Surgeons in austere settings take responsibility in planning care with finite resources, coordinating logistics, and supervising junior/local colleagues. This helps build communication, leadership, teamwork and teaching abilities far beyond those that could be gained working only in the UK.

Global health contribution and networking:

- Trainees can help contribute tangibly to global health inequity by taking part in humanitarian missions.
- Trainees also build global professional networks and friendships working alongside experienced humanitarian surgeons and local specialists. This also helps form mentorship relationships and research collaborations beyond the mission[74].

Academic and research opportunities:

- Missions can help curate interest in undertaking global surgery research, audit or quality improvement projects.
- Humanitarian contexts also offer opportunities to teach surgical skills and strengthen training programs for local providers, which can satisfy trainees' academic and educational competencies.
- Some trainees can use these experiences to gain further qualifications such as a Diploma in Tropical Medicine and Hygiene, helping bolster their professional development.

Career development and leadership trajectories:

- Many pursuing humanitarian interests report mission work to be a career defining moment for them. The NHS Global Health Fellowship in GP/ACCS reports returning volunteers often become future leaders in their field.
- This is applicable for surgical trainees as well - they have managed crises, led teams, and navigated healthcare delivery in extreme settings. These attributes can accelerate management capabilities and differentiate a trainees' career profile.

Bidirectional benefits to the NHS:

- What trainees gain on a humanitarian mission benefit patient care and the trusts they work in. Enhanced clinical judgement, broader experience, cultural competency and resilience all contribute to improved care delivery in the NHS[74].
- Staff with international experience often drive innovation and strengthen the NHS's capacity for emergency response[74]. In this way, investing in trainees' global health exposure creates a ripple effect: better-trained, more adaptable surgeons domestically, and contributions to global surgical development abroad.

4.5.2 Recommendations to improve accessibility, recognition and integration of humanitarian surgery in training

Formally recognise humanitarian experience in training:

- Curricula should be adapted to recognise and integrate global health experiences into surgical training pathways. This could include allowing a defined period abroad to count towards training (similar to other specialties)[34].
- This could be achieved by accrediting certain overseas placements with appropriate educational supervision as out of programme training (OOPT).
- Global surgery placements should count towards CCT, significantly incentivising trainee engagement.

Leveraging new flexible training initiatives:

- Using the new out of programme pause (OOPP) to help facilitate humanitarian work. The new OOPP allows trainees to step out of their program for a period (including in non-UK placements) and potentially have the competencies gained signed off toward their curriculum upon return.
- Ensuring equitable and homogenous access to OOPP across all specialties, not just surgery will make it easier for trainees to take up short-term surgical missions or fellowships without derailing their progression. Clear guidance should be given on how to document and validate skills from the field against the ISCP curriculum competencies.

Increase institutional support and guidance:

- National bodies such as the Royal Colleges and JCST should provide clear and improved guidance for trainees who wish to access humanitarian missions.
- This includes publishing official guidelines on arranging OOPE for humanitarian work, template approval processes, and named contacts or mentors for interested trainees.
- Creation of a central repository of information on global surgery opportunities - a portal listing approved humanitarian fellowships, MSF/UK-Med recruitment links, courses, and alumni experiences[34].
- By making opportunities visible but also standardised, trainees are more likely to be approved for undertaking global surgery.
- TPDs should be involved at an early stage to ensure they are appropriately supported to allow trainees to engage with global surgery – this appetite already exists, with 80% of orthopaedic TPDs in one survey agreeing that trainees should be involved overseas[33].

Encouraging training in humanitarian skills:

- Better integration of global surgery and humanitarian health topics into surgical training will help better prepare all trainees.
- Subsidised and study leave mandated access to global surgery preparedness courses will equip trainees with the relevant skills and confidence to undertake global surgery placements.
- Furthermore, formal mentorship opportunities can connect senior surgeons with humanitarian experience to junior doctors to guide their preparation (for example, the World Orthopaedic Concern UK network has senior surgeons who regularly take trainees on overseas camps).

Financial and logistical support measures:

- Funding and leave arrangements should exist to support trainees wishing to undertake a global surgery placement. This can take the form of expanded funded fellowship schemes, NHS sponsored global health bursaries and expansion of the NHS Global Health Fellowship beyond GP/ACCS.
- Professional leave should be allowed for trainees to undertake short global surgery placements without trainees losing out on pay and not needing to use their annual leave to undertake global surgery placements.
- Additionally, ensuring trainees keep their NHS benefits: solutions for pension continuity during OOPE, and HR policies to simplify re-entry, would further remove practical deterrents.

Streamline insurance and accreditation:

- Simplifying indemnity and licensing hurdles is key to minimising the logistical hurdles in place for undertaking global surgery placements. This would involve Royal Colleges supporting humanitarian initiatives to partner with indemnity providers to offer affordable indemnity packages.
- Furthermore, creating partnerships with reputable NGO's and charities can help clarify credentialing for UK trainees in obtaining licenses to work in the host countries for humanitarian missions.

Institutional partnerships and fellowships:

- By creating institutional relationships, we can strengthen collaborations that can create structured humanitarian fellowships or rotations.
- These partnerships already exist (RCSEng PaSSS programme) however they are competitive and not accessible to many trainees.
- Scaling up these partnerships (with Ministries of Health, teaching hospitals and NGOs) can offer more slots where a UK trainee spends 6–12 months in an LMIC hospital as a supervised fellow. Such posts should be accredited by the training board in advance so that competencies are recognized.

Improve recognition and career development:

- Humanitarian surgical work should be recognised as a legitimate and valued part of a surgeon's career, not an extracurricular afterthought.
- Trainee involvement in global surgery placements should be recognised towards their CCT and ARCP requirements.
- Communicating the bi-directional benefits to the NHS is crucial – hospitals should view supporting staff to volunteer as an investment in workforce development and global responsibility.
  - Some trusts already do this - Nottingham University Hospitals have already allocated budget and HR policies to support staff global health work, citing gains in staff skills and retention[74].
  - Spreading such best practices (perhaps via NHS England directives or the Royal Colleges) will integrate humanitarian surgery within the professional culture.

Foster ethical and sustainable engagement:

- Formal engagement with global surgery placements need to be underpinned ethical best practice principles and sustainability.
- Humanitarian electives and missions must prioritize local needs and avoid "voluntourism." Trainees should work in partnership with local surgeons and health systems, focusing on teaching and capacity-building where possible[34].
  - Royal College guidelines (or WHO's Global Surgery ethics frameworks) can outline standards: adequate supervision for trainees, matching tasks to a trainee's competency, and embedding placements in longer-term programs rather than one-off trip[34].

5. Conclusion

Surgery remains an exciting, innovative, and deeply rewarding career. The privilege of intervening directly on behalf of our patients, using the skills honed through rigorous training, lies at the heart of what makes our profession unique. ASiT remains committed to the pursuit of excellence in surgical training.

However, the structure and delivery of surgical training must reflect the calibre of surgeon we aspire to produce in the UK. Training can no longer be treated as secondary to service provision, it must be recognised as an essential component of safe, effective healthcare delivery within NHS Trusts. With spiraling waiting lists and increasing inequities in access to surgical care, it has never been more important to ensuring consistent access to surgical training to provide a sustainable workforce for the future.

Each numbered surgical trainee brings substantial national investment. A host Trust receives a placement fee of **£13,933** and an average salary contribution of **£30,856**,

> ***representing a total investment of £44,789 per trainee[75]. With an estimated 7,471 surgical trainees across the UK, this equates to a government investment of approximately £334 million annually[7].***

Yet, despite this considerable resource, trainees are repeatedly told that there is "no money" for core training activities. This mismatch between funding and function represents a failure of accountability and purpose.

The current state of surgical training is unsatisfactory, but it is far from beyond repair. The UK possesses world-class expertise, infrastructure, and a proud tradition of surgical excellence. What is needed now is a clear, coordinated strategy to ensure that this investment is channelled into what it is intended for: **training, education, and the support of those who deliver it.**

By prioritising access, quality, and the recognition of our educators, we can create a sustainable, modern training system that equips the next generation of surgeons to deliver the highest standard of care, both now and in the decades to come.

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