York Health Economics Consortium

Demand and Capacity Analysis for the UK Anaesthetic Workforce 2020-2040

Final Report

COMMISSIONED BY THE ROYAL COLLEGE OF ANAESTHETISTS

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Executive Summary

1. INTRODUCTION

The Royal College of Anaesthetists (RCoA) launched the 'Anaesthesia – fit for the future' campaign in February 2021. The campaign is being delivered over the next three years, and will set out a vision for 'team anaesthesia' and define the support it needs to deliver the best possible patient care in the aftermath of COVID-19 and beyond.

York Health Economics Consortium has been commissioned by the RCoA to conduct a demand and capacity analysis for the anaesthetic workforce over the next 20 years. The analysis considers factors impacting future demand and supply of the anaesthetic workforce, and discusses the assumptions and implications of the results.

2. METHODS

Preliminary discussions with the RCoA identified two key sources of literature informing the workforce supply and composition, and patient demand for anaesthetics. These are:

- The Medical Workforce Census Report 2020.
- The Centre for Workforce Intelligence (CfWI) in-depth review of the anaesthetics and intensive care medicine workforce in England 2015.

Results from a pragmatic literature search identified several sources of information referring to the current and future NHS workforce pressures and shortages. With the exception of the CfWI Workforce Modelling Report (2015), no information was identified that could expand on the methods used to quantify the future demand and supply of the anaesthetic workforce. Following a critical appraisal of the CfWI report, we believe this remains the most appropriate method in estimating the future demand and supply of the anaesthetic workforce.

A stakeholder workshop was conducted to identify factors impacting on patient demand for anaesthetics, and the supply of anaesthetists in the UK. Using a stock and flow approach by identifying and, where possible, quantifying factors that add to, and take away from the workforce, the analysis uses and builds on the methods of the CfWI Workforce Modelling Report. In this analysis, three demand projections were estimated which reflected changes in population demographic, individuals' demand for health, and workforce efficiency and productivity.

3. RESULTS

Baseline supply

Using data from the Medical Workforce Census Report (2020), the baseline supply was estimated to be 10,710 FTE in 2020, growing at 1.54% each year to 14,535 FTE in 2040, equal to a total increase of 36%.

Baseline demand

Clinical directors estimated the aspirational workforce gap across the UK to be 11.8% for consultants and 18.4% for SAS doctors (Medical Workforce Census, 2020). Applying these estimates, the total demand for anaesthetic services in 2020 is estimated to be 12,035 FTE. Using the CfWI demographic multiplier, which reflects increasing demand for health associated with an ageing population, demand is expected to increase by 25% from 2020 to 2040. As a result, baseline demand was estimated to be 12,035 FTE in 2020, growing at 1.12% each year to 15,044 FTE in 2040.

The stakeholder workshop was conducted to elicit expert opinion on factors impacting the anaesthetic workforce. No quantifiable data was collected that could be used to directly estimate the impact of the factors raised and discussed on baseline projections. Instead, key points raised in discussions between stakeholders have been used to project plausible impacts on future demand and supply, relative to the baseline estimate.

Scenario 1 – CfWI demand

The three multipliers estimated and reported in the 2015 CfWI modelling report are as follows:

- 1.25 multiplier due to population growth and ageing population
- 1.30 multiplier due to an increasing demand for health from individuals
- 1.20 multiplier due to a change in the productivity and efficiency of the workforce

Using the CfWI multipliers, demand will exponentially outstrip supply up to 2040 growing at a rate of 3.40% each year. Future demand is projected to increase by 95% to 23,469 FTE by 2040.

The size of the anaesthetic workforce would need to rise from 10,710 FTE to 23,469 FTE from 2020 to 2040 in order to meet the adjusted demand for anaesthetic services. This is equivalent 637.9 FTE per year on average from 2020 to 2040.

Scenario 2 – Adjusted CfWI demand

During the stakeholder workshop, it was noted that the COVID-19 pandemic has created a greater backlog in clinical activity, increased waiting lists and the risk of staff burnout. Stakeholders also commented on the increase in the number of people wanting to work part-time and demand for increased employment flexibility. It was believed that these concerns expanded on the factors raised by the CfWI Delphi panel experts, contributing to reduced productivity. To reflect this in the demand projections, we increased the CfWI productivity and efficiency of the workforce multiplier from 1.20 to 1.30. This is a subjective increase reflecting a 10% reduction in productivity and loss of efficiency, which implies that more anaesthetists' time will be required in the future to meet the same amount of patient need relative to today.

Using the adjusted CfWI multipliers, demand will exponentially outstrip supply up to 2040,growing at a rate of 3.81% each year. Future demand is projected to increase by 111% to 25,424 FTE by 2040.

The size of the anaesthetic workforce would need to rise from 10,710 FTE to 25,424 FTE from 2020 to 2040 in order to meet the adjusted demand for anaesthetic services. This is equivalent 735.7 FTE per year on average from 2020 to 2040.

4. DISCUSSION AND CONCLUSION

A stakeholder workshop was conducted to identify and quantify factors impacting patient demand for anaesthetics, and the supply of anaesthetists in the UK. Multiple factors impacting on demand and supply were discussed. Based on our review and analysis of the evidence in literature we concluded that these factors aligned with what was reported in the CfWI modelling report. Demand projections were, therefore, estimated using the CfWI reported multipliers. These reflected an increase in demand resulting from an ageing population, an increase in individual demand for health, and reduced productivity and efficiency of the anaesthetic workforce.

There are several limitations to our analysis, associated with limited data and varying methodological approaches that restrict comparisons with other reported estimates of the number of FTEs required to meet growing future demand for health services. In this analysis, it has not been possible to accurately quantify the impact that external factors will have on the rate of inflow and outflow, and how elastic supply will be to changes in these factors. Furthermore, there is a lack of evidence about the impact that the factors identified currently have on the workforce.

Although there is material uncertainty in the estimates of FTEs required to meet potential demand for anaesthetic services, evidence from the stakeholder workshop, combined with the analysis in the CfWI report and a recent BMA report, suggests that demand will be likely to continue to outstrip supply over the next 20 years without any intervention. On that basis, action is required to improve workforce retention, increase the number of trainees and improve specialty training fill rates, in order to increase the size of the anaesthetic workforce.

Acknowledgements

York Health Economics Consortium thanks all members who attended the stakeholder workshop on 04 June 2021 (Appendix A) for participating in the meeting and providing information that has contributed to the development of this report.

Abbreviations

ACCS	Acute care common stem anaesthesia
BMA	British Medical Association
CAGR	Compound annual growth rate
CCT	Certificate of completion of training
CfWI	Centre for Workforce Intelligence
CT1-3	Core training years one to three
DCC	Direct clinical care
DfE	Department for Education
DHSC	Department of Health and Social Care
EU	European Union
FCE	Finished consultant episodes
FTE	Full time equivalent
FY	Foundation Year
GMC	General Medical Council
HEE	Health Education England
NHSEI	NHS England and Improvement
OfS	Office for Students
RCoA	The Royal College of Anesthetists
SAS	Staff grade, associate specialist and specialty doctors
SPA	Supporting professional activities
ST3-7	Specialty training years three to seven
UK	United Kingdom
YHEC	York Health Economics Consortium

1 Introduction

1.1 Background

Anaesthesia is the single largest hospital specialty and plays a critical role in the delivery of secondary healthcare, including surgery, maternity services, emergency care, and trauma and pain services. The Royal College of Anaesthetists (RCoA) launched the 'Anaesthesia – fit for the future' campaign in February 2021. The campaign is being delivered over the next three years, and will set out a vision for 'team anaesthesia' and define the size of the workforce and the support it needs to deliver the best possible patient care in the aftermath of COVID-19 and beyond.

Anaesthetists provide services for a wide range of surgical and perioperative care services including pre-assessment, anaesthesia and analgesia on the labour ward, long-term vascular access, acute and chronic pain management, participation in multi-disciplinary teams and perioperative care (Medical Workforce Census, 2020). The anaesthetic workforce primarily comprises consultants, SAS doctors, anaesthetists in training, anaesthesia associates and locums. A consultant has completed all the training requirements in anaesthesia to allow them to be on the General Medical Council (GMC) specialist register. They work without any direct supervision and may lead teams in different areas of the hospital such as intensive care and pain medicine (RCoA website, 2021). SAS doctors have a minimum of two years of training in anaesthesia. Their workload depends on their individual levels of competency, varying from simple cases under the direct supervision of a consultant to independent practice providing anaesthesia for complex surgical cases (Medical Workforce Census, 2020). Trust doctors are usually employed on different contracts to SAS doctors. They typically work at the level of a junior trainee and participate in trainee on call rotas, but they are not regulated by the deanery (Medical Workforce Census, 2020).

The Medical Workforce Census Report (2020), completed prior to the COVID-19 pandemic, and the Centre for Workforce Intelligence (CfWI) in-depth review of the anaesthetics and intensive care medicine workforce completed in 2015 have highlighted the expanding gap in the supply of and demand for anaesthetic services.

1.2 Objectives

York Health Economics Consortium (YHEC) has been commissioned to conduct a demand and capacity analysis for the anaesthetic workforce. The aim of this work is to provide the RCoA with a demand and capacity analysis for the UK anaesthetic workforce over the next 20 years to address the current and growing workforce shortages identified in the RCoA Medical Workforce Census 2020.

As such, YHEC proposes to answer the following questions:

1. What is the current supply of anaesthetists in the UK?
2. What is the current patient demand for anaesthetists in the UK?
3. What is the projected patient demand for anaesthetists in the UK over the next 20 years?

4. What level of supply of anaesthetists is required to meet projected patient demand in the UK over the next 20 years?

5. What is the estimated training cost associated with the increased supply of anaesthetists?

2 Methods

2.1 Key Literature

Preliminary discussions with the RCoA identified two key sources of literature informing the workforce supply and composition, and patient demand for anaesthetics. These are:

- The Medical Workforce Census Report 2020.
- The CfWI in-depth review of the anaesthetics and intensive care medicine workforce in England 2015.

The findings from these two reports inform the evidence and methods used in this demand and capacity analysis. This has been summarised in Sections 2.1.1 and 2.1.2 below.

Results from a pragmatic literature search identified several sources of evidence referring to the current and future NHS workforce pressures and shortages. A summary of the evidence has been provided in Section 2.2.

2.1.1 Medical Workforce Census Report 2020

The RCoA have published workforce census surveys in 2007, 2010, 2015 and 2020 outlining the size, composition and demographics of the anaesthetic workforce. The censuses are sent out to all clinical directors in the UK, with questions deriving from, and expanding on, previous census reports. The surveys include information on the composition and size of the anaesthetic workforce. Data from the most recent census reflects the situation prior to the COVID-19 pandemic.

In 2020, the number of anaesthetist consultants in the UK had reached 7,959, growing at an average 2.1% per year since 2007. There were 2,098 SAS and Trust doctors in the UK, who makes up 21.1% of the anaesthetic workforce, a proportion relatively unchanged from 21.6% in 2015. The remaining workforce comprises 173 anaesthesia associates, 380 consultant locums, and 100 SAS doctor locums.

The Medical Workforce Census (2020) estimated there were 4,311 anaesthetists in training[1], comprising doctors from training programmes in core training years one to three (CT1-3), acute care common stem anaesthesia (ACCS), specialty training years three to seven (ST3-7), clinical research fellows who should reach certificate of completion of training (CCT) over the next five to eight years, and post CCT fellows.

[1] Data from the GMC trainee survey shows the number to be 4,462, and the RCoA Training Department records showed there were 4,804 anaesthetists in training in June 2020.

Approximately 90% of departments of anaesthesia in the UK had at least one unfilled consultant, SAS doctor or anaesthesia associate post. In total, there were 680 vacant funded consultant posts and 243 vacant SAS doctor posts in the UK. The funded gap is often reported as a percentage equal to the number of funded unfilled posts divided by the total number of funded posts (filled and unfilled). The funded workforce gap in the consultant workforce has risen from 4.4% in 2015, to 5.4% in 2017, 6.9% in 2018, and to 8% in 2020. The 2020 census found that lack of applicants was the main reason why consultant posts were not filled.

In addition to the funded workforce gap, in 2020, 53% of clinical directors reported an aspirational gap, requiring a further 374 additional colleagues to cover service. The aspirational gap is defined as the additional demand on health services, where additional members of staff could be employed to meet the demand, but for which there is no identified funding or new role (e.g. covering annual leave). In some cases, this additional demand may be covered by locums or extra contractual working sessions for existing consultants. Considering this, the 'real' workforce gap across the UK is estimated to be 11.8% for consultants and 18.4% for SAS doctors (Medical Workforce Census, 2020).

A consultant's working week is divided into programmed activities (PAs), which include direct clinical care (DCC), supporting professional activities (SPA), additional NHS duties and external duties. These PAs may be three to four hours in length depending on the time of day and day of the week. A standard contract is 10 PAs per week. Some consultants work less than full time and have fewer than 10 PAs in their job plan, whereas others may work up to 12 PAs per week. The Medical Workforce Census (2020) shows that 26% of consultants work 10 PAs per week, and 62% of consultants are working more than 10 PAs per week. The number of DCC activities is directly associated with the prevention, diagnosis or treatment of illness within the NHS.

The Medical Workforce Census (2020) found that, when compared with 2015 census data, the proportion of consultants contracted to do more than 10 PAs in their job plans has fallen from 74% to 62%. It is reported that this reduction is likely to be a result of pension taxation changes introduced in 2016, which has influenced the decisions of senior consultants to stay in work. In the 2020 census, clinical managers reported that 1,131 consultants (14.4% of all consultants) had reduced their PAs because of the new pension tax rules.

The Medical Workforce Census (2020) asked how many new posts were envisaged to be needed over the next two years. In total, departments estimated that they would need to recruit 1,104 new consultants, 471 SAS doctors, and 126 anaesthesia associates. The report also found that 333 consultants (4.2% of the consultant workforce) and 45 SAS doctors (2.8% of the SAS doctor workforce) retired in the year preceding the census.

2.1.2 CfWI review of anaesthetic and intensive care workforce 2015

The CfWI was commissioned by Heath Education England and the then Department of Health to conduct an in-depth review of the anaesthetics and intensive care medicine workforce in England. The CfWI report was published in 2015 and projected the patient demand from 2013 to 2033 for anaesthetics and intensive care services and workforce supply in England. The

CfWI produced results for several scenarios reflecting potential future demand and supply projections.

To forecast future patient demand and workforce supply for the anaesthetics and intensive care medicine (ICM) workforces, the CfWI consulted with expert stakeholders to quantify future uncertainties and narratives about how the future might evolve. The CfWI methods comprised system dynamics modelling and a Delphi panel exercise. The projections comprised:

- The 'baseline demand projection' - demand based on population growth and demographic changes such as the ageing of the population.
- The 'principal demand projection' - the 'expected' or 'most likely' future according to the expert Delphi panel, building on the 'baseline' by including the expected change in average individual need plus the impact of changes in productivity.
- The 'baseline supply projection' - supply based on current training numbers and workforce behaviour, with no changes to key modelling assumptions.
- The 'principal supply projection' - the 'expected' or 'most likely' future according to the expert Delphi panel, building on the 'baseline' by including expected changes to key variables, such as part-time working and the average retirement age.
- The 'scenario projections' - demand and supply under a range of four plausible but challenging scenarios as identified in the scenario generation workshop and quantified by our expert Delphi panel.

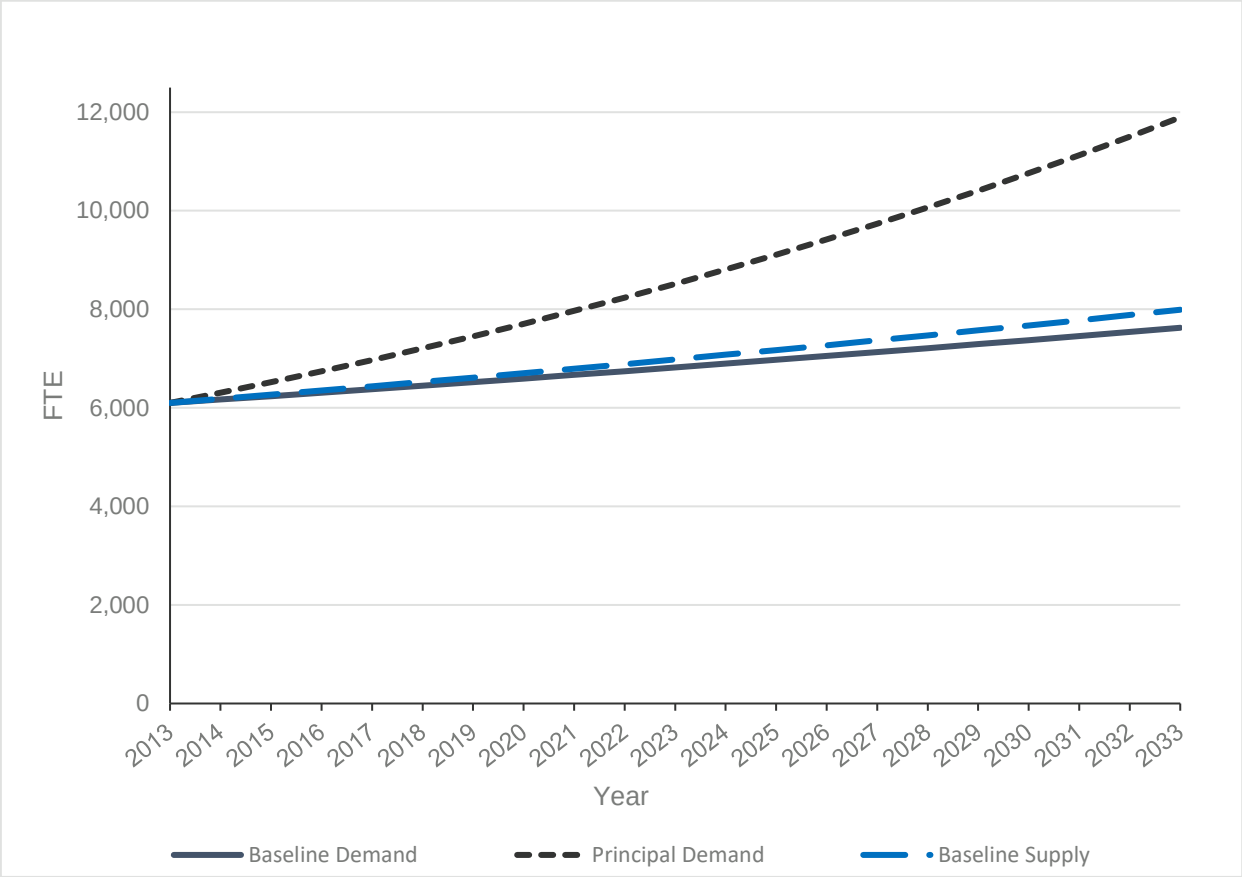
In estimating the demand for anaesthetists and intensivists, the CfWI ruled out using the number of finished consultant episodes (FCEs) as a proxy measure for quantifying service demand, as the proportion of anaesthetists and ICM FCEs recorded was lower than the proportion of anaesthetists and intensivists in the workforce, demonstrating that FCEs are inconsistently recorded.

Instead, the CfWI used the expert Delphi panel to acquire evidence from stakeholders on the quantification of baseline service demand. The Delphi panel answers were converted into a multiplier that indicated how much greater the demand will be in the future. In the base case, a demographic multiplier was used. In the scenario projections, the same demographic multiplier was used, along with a patient need multiplier (demand for health), and a productivity and efficiency multiplier (how well health is produced). The CfWI projected that baseline demand will increase by 25% from approximately 6,100 to 7,600 FTE from 2013 to 2033, with the principal projection increasing on average by 4.7% each year.

In estimating the supply of anaesthetists and intensivists, the CfWI identified the number of trainees who are estimated to become new certificate of completion of training holders, minus the current consultants expected to leave due to workforce attrition or retirement. The CfWI projected that total baseline supply would increase by 31% from approximately 6,100 to approximately 8,000 FTE from 2013 to 2033.

When assuming only changes in demographic factors, the CfWI estimated that the combined anaesthetist and intensivist workforce supply is projected to outstrip baseline demand by 2033. However, when considering the principal demand projection, demand is expected to outstrip supply by 2033 (see Figure 2.1).

Figure 2.1: CfWI demand and supply projections from 2013 to 2033 – reconstructed using data from CfWI report (2015)



Since 2015, the contribution of anaesthetists has continued to grow into other areas of hospital services and perioperative care. This was noted by the Delphi panel conducted by CfWI and was accounted for in the principal demand projection, using an estimated increase in demand of 35%. However, the CfWI emphasized that the level of perioperative work being conducted and the grade of doctor undertaking the work could not be clearly estimated, and, as such, the future impact could not be accurately assessed.

2.2 Supporting Literature

The RCoA Workforce Data Pack (2018) report, developed to support commissioners and workforce planners understand the national and regional workforce picture, provided a set of key recommendations in support of increasing the anaesthetic workforce. In summary, it recommended that core and specialty anaesthesia training posts must be increased to ensure sufficient supply of future anaesthetists, and that greater employment flexibility can support workforce retention. The report highlighted that there was a significant increase in extra work undertaken beyond full-time contracts from 2016 to 2017, demonstrating an unmet need for anaesthetic services and corresponding increased pressure on existing staff. Using data from the 2015 RCoA Workforce Census and CfWI report, the RCoA estimated that to keep up with patient demand whilst accounting for retirement attrition, the number of anaesthetic consultants in England must increase by 417 per year by 2027.

An online report by NHS Providers outlines several challenges facing the supply of clinical staff in the NHS. In particular, the report noted that faced with the current workforce gap, there is a continued need for the NHS to recruit from the EU and the rest of the world to mitigate clinical staff shortfalls. The report noted that approximately 29% of doctors and 13% of nurses in the UK were trained in another country. With the uncertainty around international recruitment created by Brexit, it is necessary that further efforts are made to increase the numbers of clinical staff trained domestically.

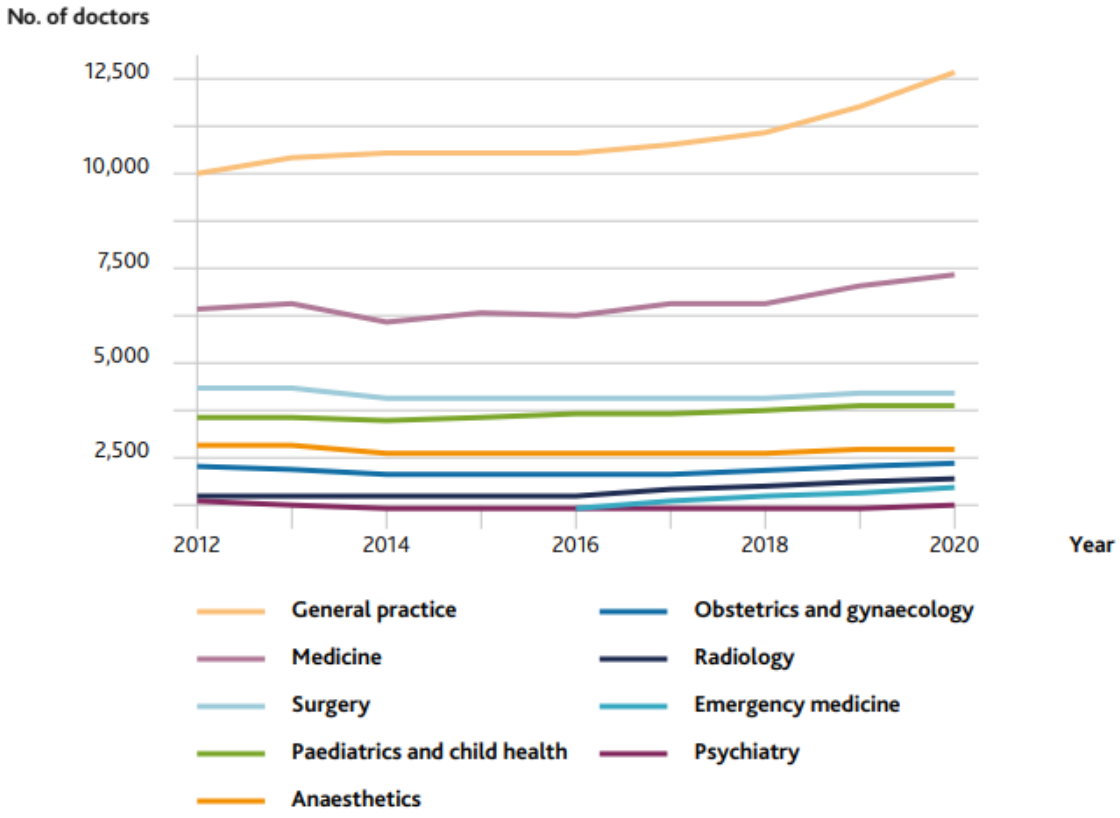
In October 2020, the British Medical Association (BMA) released a report addressing the current and emerging consultant workforce shortages. The report highlighted several factors driving consultant retention problems and why retaining and growing the consultant workforce must be a top priority for the NHS. These factors included:

- The UK has a growing and ageing population
- Consultants are retiring earlier
- Consultant-delivered care models are becoming standard of care
- Data on consultant vacancies is likely an underestimate
- The COVID-19 pandemic has increased backlogs, waiting lists and waiting times

The report concludes that the current consultant workforce is inadequately sized to deliver all of the patient's care required now and into the foreseeable future. The BMA refers to a set of modelling predictions from several medical Royal Colleges with regard to the number of trainees in their respective fields required to ensure an appropriate future supply of consultants. The report makes specific reference to the 417 training places required per year estimated by the RCoA in their Workforce Data Pack report in 2018. The BMA emphasize that population growth and demographic change is highly likely to place increasing demands on the healthcare system, and retention and expansion efforts are needed now to increase consultant numbers.

In 2020, the GMC released a report on the state of medical education and practice in the UK. As can be seen in Figure 2.2, the report outlines that the number of anaesthetic trainees has remained largely unchanged between 2012 and 2020.

Figure 2.2: Numbers of doctors by specialty programme per year, from 2012 to 2020 – figure taken from GMC (2020)



2.3 Analysis

Results from a pragmatic literature search identified several sources of information referring to the current and future NHS workforce pressures and shortages. It was noted that the CfWI Workforce Modelling Report (2015) and the Medical Workforce Census (2020 and previous versions) were central references in other published reports that commented on NHS and consultant workforce shortages (RCoA Workforce Data Pack, 2018; BMA, 2020). With the exception of the CfWI Workforce Modelling Report (2015), no information was identified that could expand on the methods used to quantify the future demand and supply of the anaesthetic workforce.

The CfWI modelling report outlined that no current data exist that accurately measure the demand for current and future anaesthetic services. As a result, the report used a Delphi panel to identify factors which impact demand and supply and estimated and applied this as a set of multipliers. As no new information could be identified that would support an alternative approach, we believe this remains the most appropriate method in estimating future demand and supply of the anaesthetic workforce.

Given the budget and time constraints of this project, it was not possible to conduct a formal Delphi panel exercise. Instead, a stakeholder workshop was conducted to identify factors impacting patient demand for anaesthetics, and the supply of anaesthetists in the UK. Using a stock and flow approach by identifying and, where possible, quantifying factors that add to, and take away from the workforce, this analysis uses and builds on the methods of the CfWI workforce modelling and proposes the following revised projections for future demand and supply for the anaesthetic workforce:

1. Baseline supply and demand projection:

    - Projected future demand based on population growth and demographic changes using the CfWI (2015) multiplier.

    - Current supply based on the size and composition of the workforce using the Medical Workforce Census (2020).

2. Two scenario projections:

    - Building on the baseline projection, projected future demand including the patient need multiplier and productivity and efficiency multiplier reported by the CfWI (2015).

    - Building on the baseline projection, projected future demand by adjusting the appropriate CfWI multipliers using factors identified in the stakeholder workshop.

This analysis builds on the CfWI report by using the most recent workforce census data to estimate the current supply of anaesthetists. Projections of supply and demand have been estimated from 2020 to 2040. Transparency of the rationale supporting the estimates is provided in Section 3.3. This is essential because such estimates are, of necessity, subjective. Summary results have also been provided by individual nation.

3 Stakeholder Workshop

The stakeholder workshop was held on the 04 June 2021 and involved experts from NHS England and Improvement (NHSEI), Health Education England (HEE), Health Education and Improvement Wales, NHS Education Scotland, the Department of Health and Social Care (DHSC), the Association of Anaesthetists, and the RCoA.

During the workshop, participants were asked to discuss questions relating to the estimation of current demand and factors that contribute to future demand and supply of the anaesthetic workforce. Table 3.1 provides an overview of the key points that were raised during the workshop.

Table 3.1 Stakeholder workshop key points

Factors impacting demand	Factors impacting supply
Ageing population requires additional and more complex surgical procedures – increasing demand on anaesthesia	Locum supply should reflect a gap between supply and demand
The rate at which the general population consumes health services is increasing each year	Locums should be used as a short-term solution rather than based on long-term contracts
Greater backlog and increased waiting list due to COVID-19	Consultants working more than one FTE (>10 PAs per week)
Increase in perioperative care work and demand outside the operating theatre	Increase in the feminisation and number of people working part time
Move towards consultant-led care, requiring more consultant time	Consultants trending towards earlier retirement
Greater safety measures and increasing complexity of surgeries increasing workload	Insufficient supply of trained, and in-training consultants
	Government boost to number of medical school places in 2018-2020
	International recruitment numbers threatened by Brexit

The stakeholder workshop identified a range of factors that contribute to the inflows and outflows of the anaesthetic workforce. In general, stakeholders suggested that there is an insufficient level of inflows into the workforce. Several stakeholders noted that in-training numbers are too low, and international recruitment has been threatened by Brexit. However, it is unclear if this reduced level of inflow is different to previous years. The 2020 Medical Workforce Census reported 284 empty training posts compared with 424 in the 2015 census. This suggests an improvement in training uptake, but annual ST3 recruitment numbers have remained relatively unchanged since 2015 (499 in 2019, compared with 480 in 2015). The RCoA Workforce Data Pack (2018) report noted that ST3 fill rates (the proportion of available posts filled) from 2014 to 2017 were low and inconsistent across regions. The average ST3 fill rate from 2014 to 2017 was 91%.

In 2016, the government announced it would expand and fund up to 1,500 additional medical training places from late 2018. It is unknown how many medical school trainees may end up working in anaesthesia. Furthermore, on average, it takes 14 years for a medical student to become a trained anaesthetic consultant. Assuming that trainees post FY2 contribute to the workforce any impact on the workforce would not be seen for at least seven years (RCoA, 2021).

Stakeholder members also outlined concern at the increase in the number of consultants trending towards earlier retirement. This concern was supported by evidence from the Medical Workforce Census (2015) that 4.2% of consultants retired in 2019 compared with 2.7% in 2015.

Concerns regarding the current stock of anaesthetists were also raised by several stakeholders. Many stakeholders commented on the increase in the number of people wanting to work part-time, and increasing employment flexibility. Furthermore, trainee positions also have the option to extend their training length by going part-time. This results in a reduction in the number of trained FTEs, increased length of training, and a reduced ability of the workforce to meet current and future patient demand. Results from a recent survey of anaesthetists of all grades on the factors affecting retention in anaesthesia, conducted by the RCoA, have highlighted that of 48 consultant and SAS doctor respondents, 62.5% felt the option to work less than full time or retire and return part-time would make a big difference in supporting them to work as long as possible.

All factors that were raised by stakeholders concerning the factors impacting future demand indicated that demand would increase at a greater rate than in previous years. The point of primary concern was the greater backlog, increased waiting lists and risk of staff burnout caused by the recent COVID-19 pandemic. Results from the RCoA retention workforce survey indicated that 23% of consultant and SAS doctor respondents felt less inclined to stay working in anaesthesia in the NHS as a result of COVID-19. This has been further supported in a recent study by the BMJ (2021), showing that the average age at which doctors are retiring has fallen from 2007 to 2020. Greater safety measures, increased complexity of surgeries, and expansion of perioperative care activity all suggested demand on anaesthesia would continue to increase.

As the size of the general population grows, with a proportional increase in the ageing population, the number of complex surgical procedures will increase. This not only adds a burden to total staff numbers, but also to more experienced senior anaesthetists. Other factors include additional roles in perioperative care being taken on by anaesthetists, anaesthetists in training working more restricted hours, and the amount of weekend and evening work increasing (Medical Workforce Census, 2020). This was also outlined as a key trend in the 2015 CfWI report as having a negative impact on the productivity of the anaesthetic workforce.

In summary, our appraisal of the factors identified by stakeholders aligned with what was reported in the CfWI modelling report and more recent reports including the BMA report on current and future consultant workforce shortages in the UK. Hence, we believe that the factors identified by the CfWI are still relevant six years later and the projections form a good foundation for this report to build on.

4 Demand and Supply Projections

The Medical Workforce Census (2020) showed that 26% of consultants work 10 PAs per week, and 62% of consultants are working more than 10 PAs per week. The number of PAs in consultants' job plans is called the participation rate, and a standard consultant contract is 10 PAs per week. Headcount refers to the total number of staff in either part time or full-time employment, and has been used in the Medical Workforce Census (2020) to report the total number of anaesthesia staff. Full time equivalent (FTE) is based on the proportion of time staff work in a role, and has been used in the CfWI demand and supply projections (NHS Digital, 2021).

As this analysis has adopted the same approach as the CfWI in estimating the future demand and supply of the anaesthetic workforce, we have based our predictions on FTE staff. Although we know this is not the case, as 62% of consultants are working more than 10 PAs per week, we do not know by how much consultants work more than 10 PAs. Furthermore, it is anticipated that any estimation of future required roles should be based on the standard contract (10 PAs). Therefore, by assuming that all staff are equal to one FTE, our predictions are likely to be an underestimate of the number of staff required to meet demand.

4.1 Baseline Projections

4.1.1 Baseline supply

As reported in the Medical Workforce Census (2020), there were 7,959 consultant anaesthetists, 2,098 SAS and Trust doctors, 173 anaesthesia associates, 380 consultant locums, and 100 SAS doctor locums in the UK in 2020.

The Medical Workforce Census (2020) report also provided information on the number consultants and SAS and Trust doctors from previous years. Current CCT consultant anaesthetists and SAS and Trust doctors account for 94% of the anaesthetic workforce. Using data from the Medical Workforce Census on previous years, the weighted compound annual growth rate (CAGR) in the number of consultants and SAS and Trust doctors from 2010 to 2020 was estimated to be 1.54%.

As a result, the baseline supply was estimated to be 10,710 FTE in 2020 growing at 1.54% each year to 14,535 FTE in 2040, equal to a total increase of 36%. Using the CAGR from 2010 to 2020 assumes that factors influencing the workforce inflows and outflows from 2010 to 2020 will remain the same for future years.

4.1.2 Baseline demand

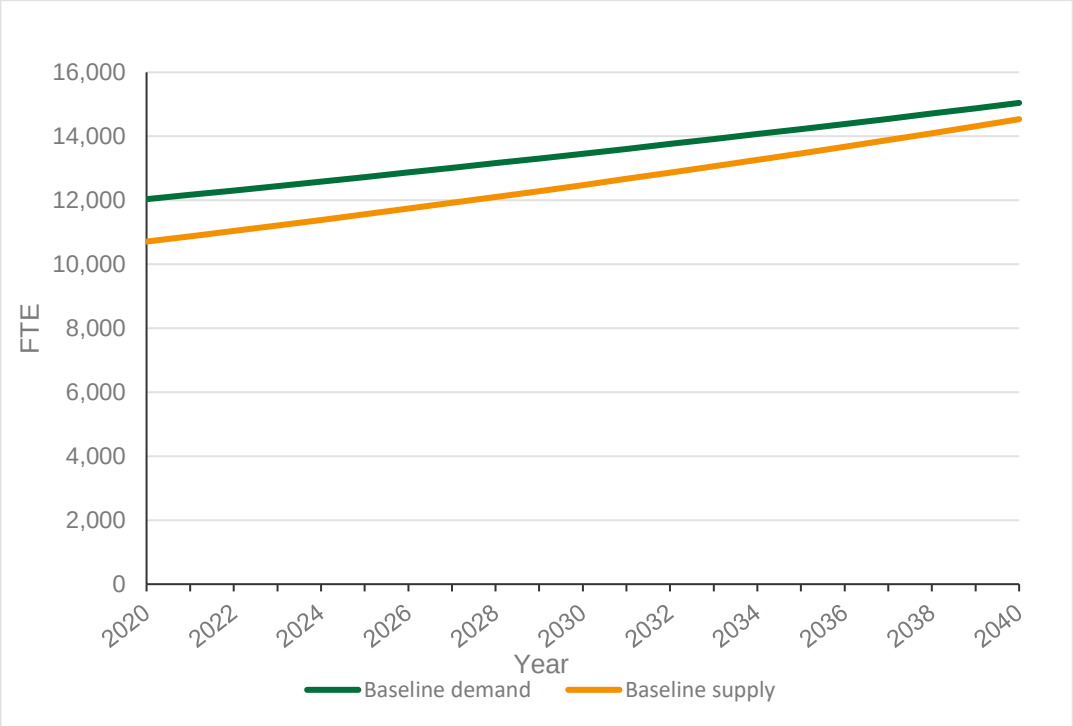
As discussed in Section 2.1.2, when estimating the current demand for anaesthetic services, the CfWI ruled out using the number of surgical cases as a proxy for demand for anaesthesia. Although anaesthesia is required for a wide range of operations, FCEs can be inconsistently recorded and do not capture the time required to perform the surgery. As such, in this analysis baseline demand for anaesthetic services was estimated as the size of the current workforce plus the number of additional FTEs required to fill the aspirational gap. The 2020 Medical Workforce Census asked clinical directors to estimate the size of their aspirational gap. As such, adopting this method implicitly assumes that if all funded and non-funded (aspirational) posts were filled, then supply would meet demand.

Considering the 'real' workforce gap across the UK is estimated to be 11.8% for consultants and 18.4% for SAS doctors (Medical Workforce Census, 2020), the estimated total demand for anaesthetic services is 12,035 FTE in 2020.

The CfWI report (2015) estimated a demographic multiplier, which reflected increasing demand for specialty care due to population growth using ONS projections of England's population, and weightings for the requirement for specialty services by age and gender. The CfWI projected that baseline demand will increase by 25% from 2013 to 2033. It was originally anticipated that that this value could be updated to reflect most recent ONS projections, however, it was not possible to disaggregate the multiplier to do so. As such the CfWI reported value has been used in this analysis.

As a result, baseline demand was estimated to be 12,035 FTE in 2020, growing by 25% to 15,044 FTE in 2040, equal to a CAGR of 1.12%.

Figure 4.1: Baseline demand and supply projections from 2020 to 2040



When considering only changes in demographic factors, baseline demand is projected to increase by 25% (CAGR of 1.12%) from 2020 to 2040, and baseline supply is projected to increase by 36% (CAGR of 1.54%) from 2020 to 2040. The baseline projections assume that baseline demand will continue to outstrip supply at a decreasing rate up to 2040 (Figure 4.1).

As such, the size of the anaesthetic workforce would need to rise from 10,710 FTE to 15,044 FTE from 2020 to 2040 in order to meet demand for anaesthetic services. Without considering the current growth and trajectory of supply, this is equivalent to 216.7 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ demand\ 2040 - Total\ FTE\ supply\ 2020)}{Total\ number\ of\ years}$$

$$\frac{(15{,}044 - 10{,}710)}{20}$$

Assuming that the current trajectory of workforce supply continues (growing at a rate of 1.54% each year), supply will increase by 3,825 FTE from 2020 to 2040. In order to meet demand, supply would need to increase by an additional 25.5 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ demand\ 2040 - Total\ FTE\ supply\ 2040)}{Total\ number\ of\ years}$$

$$\frac{(15{,}044 - 14{,}535)}{20}$$

4.2 Scenario Projections

The stakeholder workshop was conducted to elicit expert opinion on factors impacting the anaesthetic workforce. The results of the stakeholder consultation have been summarised in Section 3. No quantifiable data was collected that could be used to directly estimate the impact of the factors raised and discussed on baseline projections. Instead, key points raised in discussions between stakeholders have been used to project plausible impacts on future demand and supply, relative to the baseline estimates presented in Section 4.1.

4.2.1 CfWI multipliers

As outlined in Section 2.3, in the first scenario, the baseline demand projections have been adapted to include the patient need multiplier and the productivity and efficiency multiplier reported by the CfWI (2015).

During the Delphi panel exercise conducted by the CfWI in 2015, experts were asked questions relating to the relevant demand factors from which they provided numeric answers. The average (median) values obtained from these questions were converted into a multiplier that indicates how much greater demand will be in the future compared to current demand.

The demographic multiplier, the multiplier reflecting an increase in patients demand for health, and the multiplier reflecting a less productive and efficient workforce estimated and reported in the CfWI modelling report (2015) are as follows:

- 1.25 multiplier due to population growth and ageing population
- 1.30 multiplier due to an increasing demand for health from individuals
- 1.20 multiplier due to a change in the productivity and efficiency of the workforce

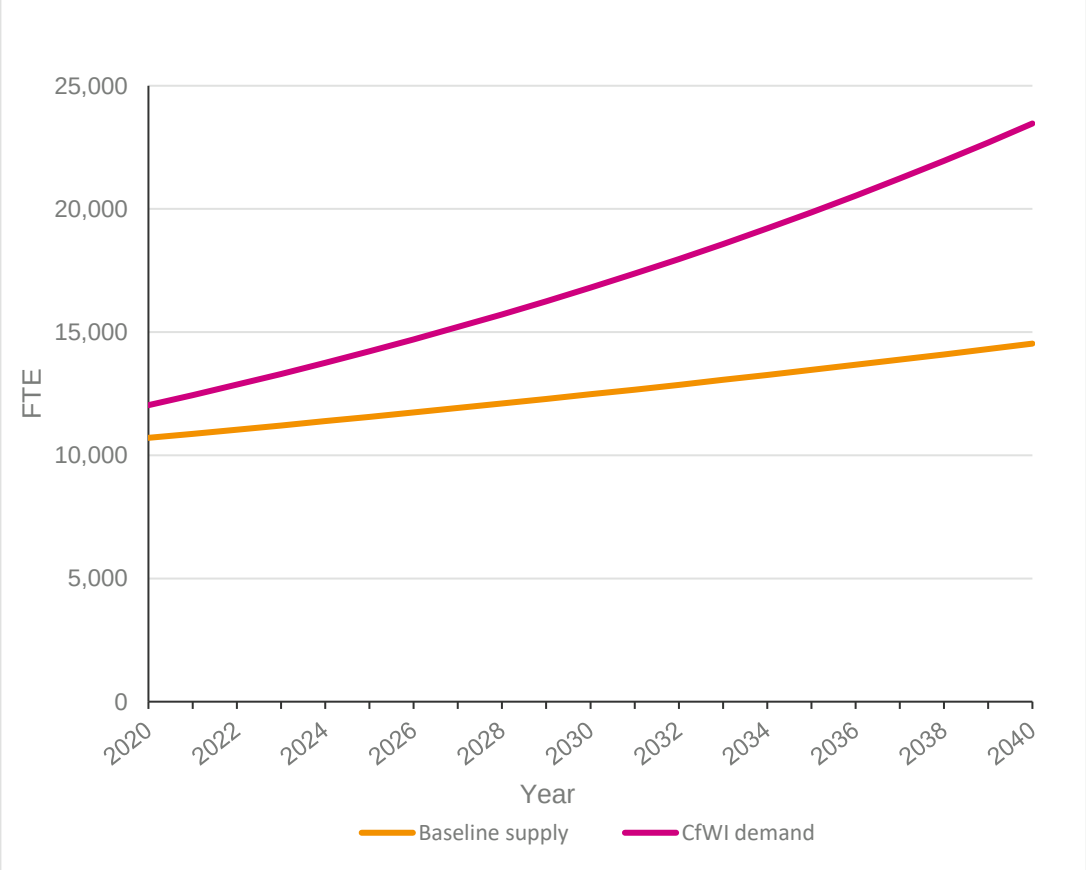
These are the multipliers used to estimate the principal demand projection within the CfWI report. The formula used to project scenario patient demand in this analysis is the same as in the CfWI report, and is as follows:

$$Total\ FTE\ demand\ 2020 \times (demographic\ multiplier \times patient\ need\ multiplier \times productivity\ and\ efficiency\ multiplier)$$

By using the same multipliers, this analysis assumes that the key factors relating to the future demand projections raised by the CfWI Delphi panel group in 2015 are still relevant in 2020. As summarised in Section 3, we feel this is a reasonable assumption, and note that no evidence could be identified in literature that would suggest otherwise.

Using the CfWI multipliers, an adjusted demand projection has been estimated and presented in Figure 4.2.

Figure 4.2: Adjusted demand (CfWI) and baseline supply projections from 2020 to 2040



In this scenario, it is anticipated that on average, individuals' demand for health continues to rise year on year. Furthermore, decreasing workforce efficiency and productivity, and additional roles outside of theatre work (e.g. perioperative care) will require more anaesthetists time to meet the same amount of patient need relative to today.

Using the CfWI multipliers, demand will exponentially outstrip supply up to 2040 growing at a rate of 3.40% each year. Future demand is projected to increase by 95% to 23,469 FTE by 2040.

The size of the anaesthetic workforce would need to rise from 10,710 FTE (Section 4.1.1) to 23,469 FTE from 2020 to 2040 in order to meet the adjusted demand for anaesthetic services.

Without considering the current growth and trajectory of supply, this is equivalent 637.9 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ CfWI\ demand\ 2040 - Total\ FTE\ supply\ 2020)}{Total\ number\ of\ years}$$

$$\frac{(23{,}469 - 10{,}710)}{20}$$

Assuming that the current trajectory of workforce supply continues (growing at a rate of 1.54% each year), supply will increase by 3,825 FTE from 2020 to 2040. In order to meet demand, supply would need to increase by an additional 446.7 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ CfWI\ demand\ 2040 - Total\ FTE\ supply\ 2040)}{Total\ number\ of\ years}$$

$$\frac{(23{,}469 - 14{,}535)}{20}$$

4.2.2 Adjusted multipliers

As outlined in Section 2.3, in the second scenario, using the opinions elicited in the stakeholder workshop, we have estimated an additional demand projection by adjusting the CfWI multipliers.

During the stakeholder workshop it was noted that the COVID-19 pandemic has created a greater backlog, increased waiting lists and risked staff burnout. Stakeholders also commented on the increase in the number of people wanting to work part-time and demand for increased employment flexibility. This was supported by a recent retention workforce survey conducted by the RCoA.

In its report, the BMA (2020) echoed several of the concerns noted by our stakeholders, stating that NHS performance measures have been progressively deteriorating over recent years. They further highlighted that the COVID-19 pandemic exacerbated the backlog of non-COVID care, and medical workforce numbers would need to increase to overcome and restore activity and performance.

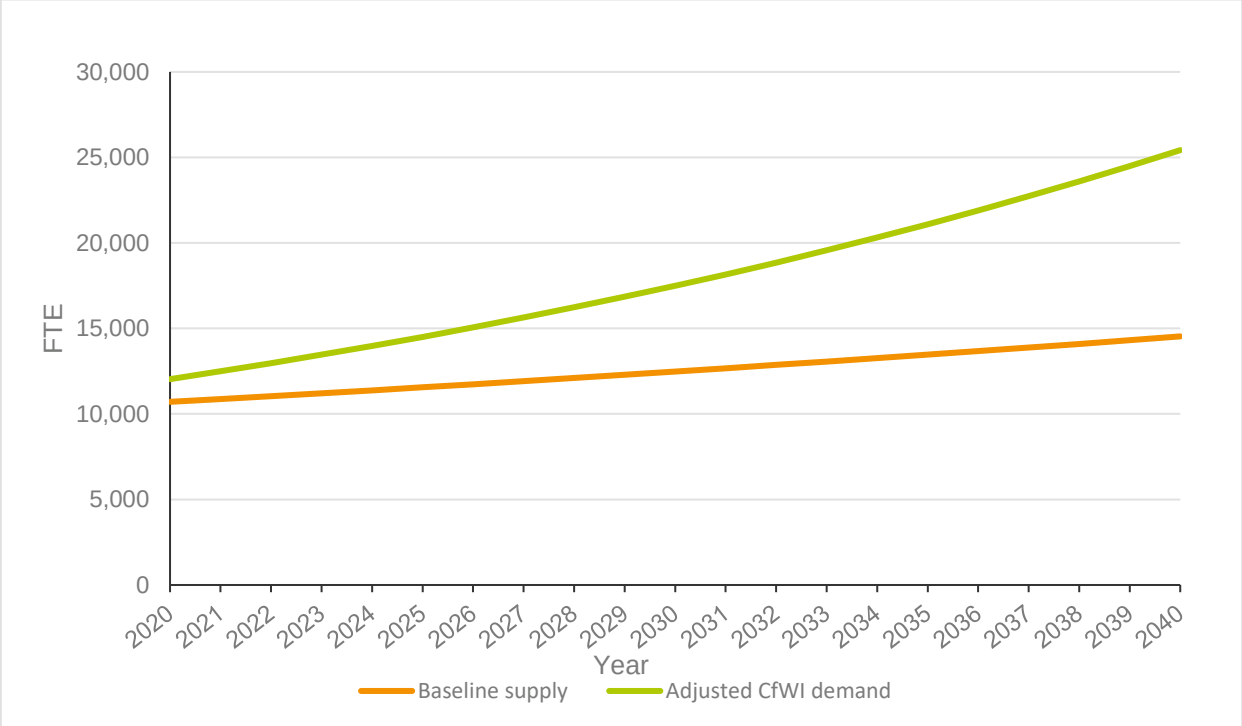
Based on our review of the evidence, our opinion was that these concerns expanded on the factors raised by the CfWI Delphi panel experts contributing to reduced productivity. To reflect this in the demand projections, we increased the CfWI productivity and efficiency of the workforce multiplier from 1.20 to 1.30. This is a subjective increase reflecting a 10% reduction in productivity and loss of efficiency, which implies that more anaesthetist time will be required in the future to meet the same amount of patient need relative to today.

No change has been made to the demographic multiplier, as an increasingly ageing population was reflected in the original CfWI estimation. As noted in Section 4.1.2, it was originally anticipated that that this value could be updated to reflect most recent ONS projections, however, it was not possible to disaggregate the multiplier to do so.

No change has been made to the multiplier reflecting an increasing demand for health from individuals as this was also considered in the original CfWI report.

Using the adjusted CfWI efficiency and productivity multiplier, an updated demand and projection can be seen in Figure 4.3. The adjusted demand projection presents a pessimistic scenario, whereby the productivity and efficiency of the anaesthetic workforce has decreased further since 2015.

Figure 4.3: Adjusted demand (CfWI adjusted) and baseline supply projections from 2020 to 2040



In this scenario, it is anticipated that on average, individuals' demand for health continues to rise year on year. Furthermore, decreasing workforce efficiency and productivity, and additional roles outside of theatre work (e.g. perioperative care) will require more anaesthetists time to meet the same amount of patient need relative to today. The decreased workforce efficiency and productivity is greater than that estimated in the CfWI report (2015).

Using the adjusted CfWI multipliers, demand will exponentially outstrip supply up to 2040 growing at a rate of 3.81% each year. Future demand is projected to increase by 111% to 25,424 FTE by 2040.

The size of the anaesthetic workforce would need to rise from 10,710 FTE (Section 4.1.1) to 25,424 FTE from 2020 to 2040 in order to meet the adjusted demand for anaesthetic services.

This is equivalent 735.7 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ adjusted\ CfWI\ demand\ 2040 - Total\ FTE\ supply\ 2020)}{Total\ number\ of\ years}$$

$$\frac{(25{,}424 - 10{,}710)}{20}$$

Assuming that the current trajectory of workforce supply continues (growing at a rate of 1.54% each year), supply will increase by 3,825 FTE from 2020 to 2040. In order to meet demand, supply would need to increase by an additional 544.5 FTE per year on average from 2020 to 2040. This has been calculated as:

$$\frac{(Total\ FTE\ CfWI\ adjusted\ demand\ 2040 - Total\ FTE\ supply\ 2040)}{Total\ number\ of\ years}$$

$$\frac{(25{,}424 - 14{,}535)}{20}$$

4.2.3 Locums

During the stakeholder workshop, many stakeholders discussed the implications of employing short-term and long-term locum doctors and the impact on measuring workforce gaps. It was agreed that there will always be a need to use short-term locum doctors to cover temporary workforce gaps, such as sick leave or maternity/paternity leave. However, it was noted that long-term locum doctors will take up unfilled consultant and SAS doctor posts. Stakeholders highlighted that this is an inefficient use of resource (as locum doctors may be more expensive) and may lead to an underestimation of the workforce gap.

The Medical Workforce Census (2020) does not distinguish between locums covering long- or short-term leave. As such, to explore the impact of long-term locum supply, we have assumed that half of the current locum workforce may be covering long-term leave, and that these roles should ideally be replaced by full time staff.

The Medical Workforce Census (2020) estimates that of the 10,710 FTE anaesthetic workforce, 480 FTE were locums (Section 4.1). When assuming that half of these staff are covering full time roles, baseline supply of anaesthetic services falls from 10,710 FTE to 10,470 FTE.

The impact on the required future supply projections for baseline, and scenario one and two, are as follows:

- In the base case, the supply would need to increase by 228.7 FTE per year on average from 2020 to 2040 – a relative annual FTE increase of 5.5%.
- In the first scenario (CfWI multipliers), the supply would need to increase by 649.9 FTE per year on average from 2020 to 2040 – a relative annual FTE increase of 1.9%.
- In the second scenario (adjusted CfWI multiplier), the supply would need to increase by 747.7 FTE per year on average from 2020 to 2040 – a relative annual FTE increase of 1.6%.

4.3 Split by Nation

The Medical Workforce Census shows that in 2020 there were 7,959 consultant anaesthetists in the UK. Using the size of the consultant workforce for each nation to estimate a proportional split, Table 4.1 provides the number of FTE anaesthetic staff required per year on average to meet demand from 2020 to 2040.

Table 4.1: Required annual average FTE increase from 2020 to 2040 by nation

Nation	Proportional split (number of consultants)	Baseline	Scenario 1 CfWI multipliers	Scenario 2 Adjusted CfWI multipliers
England	81.3% (6,471)	176.2	518.7	598.2
Northern Ireland	3.5% (279)	7.6	22.4	25.8
Scotland	9.7% (776)	21.1	62.2	71.7
Wales	5.4% (433)	11.8	34.7	40.0
UK	**100.0%** (7,959)	**216.7**	**637.9**	**735.7**

It is important to note, that, by using the size of the consultant workforce to estimate a proportional split of the required FTE anaesthetic workforce staff, it is assumed that the provision of anaesthetic services is homogenous across all four nations. In reality, it may be the case that anaesthetic services are provided differently in line with different national health services.

4.4 Workforce Training Costs

The main way to increase the size of the anaesthetic workforce is through training programmes. The training of doctors, dentists, nurses, midwives and allied health professionals is carried out as a partnership between the Office for Students (OfS), the Department for Education (DfE), HEE, the DHSC, higher education institutions and placement providers within the NHS, and devolved nations' equivalents. The number of medical school placements available is regulated by the DfE and the DHSC and devolved nations' equivalents. The OfS and devolved nations' equivalent are responsible for controlling and determining how to distribute medical school places regionally through intake targets.

The standard medical school training pathway in the UK takes a total of six to eight years per student. This comprises a medical school undergraduate period of between four and six years, and a subsequent two-year postgraduate foundation course. Following the two-year foundation course, medical students may enter speciality training. Doctors who wish to train in anaesthesia apply to go on a training programme, which lasts seven more years to become a consultant.

The 2020 census estimated there were 4,311 anaesthetist trainees, comprising doctors from training programmes in CT1-3, ACCS, ST3-7, clinical research fellows who should reach CCT over the next five to eight years, and post CCT fellows.

The RCoA have estimated the cost of anaesthetic training to HEE to be £245,283 per trainee over the seven years' specialty training programme. This cost comprises 50% of basic salary, covered by HEE, plus £12k training tariff per year, which pays for educational supervision and local education costs. The RCoA note that this cost is not representative of the true cost to the NHS. This cost does not cover the remaining 50% of basic salary, which is covered by Trusts, and does not account for the increase in service provision from trainee's participation in the workforce.

For the three scenarios presented in this report, we have estimated number of additional FTE staff that would be required from 2020 to 2040 to meet future demand. These estimates provide an overview of the required total FTE anaesthetic workforce from 2020 to 2040.

- In the base case, the supply would need to increase by 216.7 FTE per year on average from 2020 to 2040.
- In the first scenario (CfWI multipliers), the supply would need to increase by 637.9 FTE per year on average from 2020 to 2040.
- In the second scenario (adjusted CfWI multiplier), the supply would need to increase by 735.7 FTE per year on average from 2020 to 2040.

Acquiring the additional FTE staff may be achieved through both, reducing workforce outflows (e.g. improved staff retention) and increased workforce inflows (e.g. increased number of trainees).

When assuming that the current trajectory of workforce supply continues (growing at a rate of 1.54% each year), we can estimate the number of additional FTE that would be required per year on top of predicted current growth.

- In the base case, the supply would need to increase by an additional 25.5 FTE per year on average from 2020 to 2040.
- In the first scenario (CfWI multipliers), the supply would need to increase by an additional 446.7 FTE per year on average from 2020 to 2040.
- In the second scenario (adjusted CfWI multiplier), the supply would need to increase by an additional 544.5 FTE per year on average from 2020 to 2040.

If we assume that the rate of workforce outflows remains unchanged, we can further assume that the number of additional FTE that would be required per year on top of current growth (current training levels), may be achieved through increased training of anaesthetic staff (inflows).

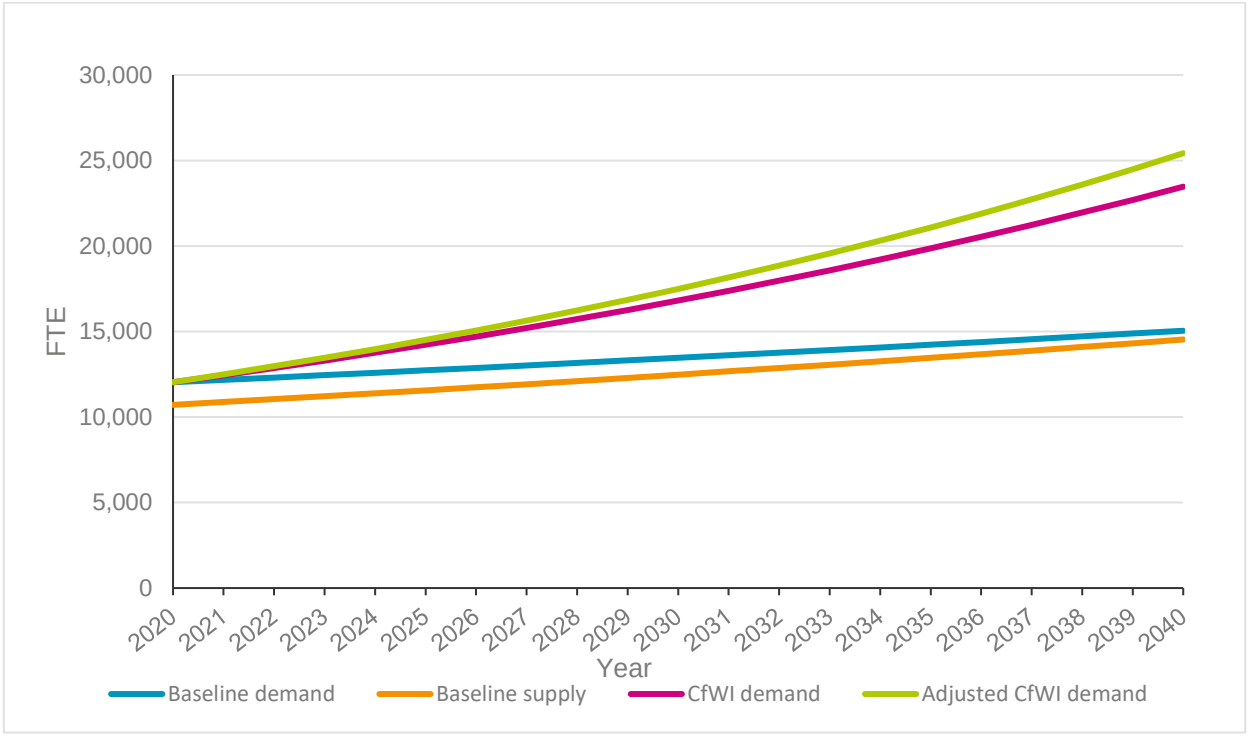
As such, the potential additional anaesthetic training costs can be estimated as follows:

- In the base case, the supply would need to increase by an additional 25.5 FTE per year on average from 2020 to 2040 – the associated training cost would be £6.3m per year.
- In the first scenario (CfWI multipliers), the supply would need to increase by an additional 446.7 FTE per year on average from 2020 to 2040 – the associated training cost would be £109.6m per year.
- In the second scenario (adjusted CfWI multiplier), the supply would need to increase by an additional 544.5 FTE per year on average from 2020 to 2040 - the associated training cost would be £133.6m per year.

5 Discussion and Conclusion

Data and information drawn from the 2020 Medical Workforce Census and 2015 CfWI workforce modelling have been used to estimate a baseline and to forecast future anaesthetist demand and supply over 20 years. This analysis estimates that, in the base case, the size of the anaesthetic workforce would need to rise from 10,710 FTE to 15,044 FTE from 2020 to 2040 in order to meet demand for anaesthetic services. Without considering the current growth and trajectory of supply, this is equivalent to 216.7 FTE per year on average from 2020 to 2040. Figure 5.1 presents the projections for base case supply, and all three demand scenarios presented in this report.

Figure 5.1: Baseline supply, baseline demand, CfWI demand, and adjusted CfWI demand projections from 2020 to 2040 (UK)



A stakeholder workshop was conducted to identify and quantify factors impacting patient demand for anaesthetics, and the supply of anaesthetists in the UK. Multiple factors impacting demand and supply were discussed. Based on our review and analysis of the evidence in literature we concluded that these factors aligned with what was reported in the CfWI modelling report. Demand projections were, therefore, estimated using the CfWI reported multipliers. These reflected an increase in demand resulting from an ageing population, an increase in individual demand for health, and reduced productivity and efficiency of the anaesthetic workforce.

Furthermore, in line with a recent report by the BMA (2020), many stakeholders believed that, as a result of the COVID-19 pandemic, the anaesthetic workforce faces greater backlog, increased waiting lists and higher risk of staff burnout. It was emphasized that expansion into other fields of work, such as perioperative care, and an increase in the number of people working part time, may reduce the ability of the workforce to meet a rising demand for health care. As such, we felt that these concerns expanded on the factors raised by the CfWI Delphi panel experts contributing to reduced productivity. To reflect this, an additional demand projection was estimated from adjusting the CfWI productivity and efficiency multiplier.

Both scenario projections determined that demand will exponentially exceed supply to 2040, and the anaesthetic workforce in the UK would need to increase by 637.9 and 735.7 FTE from 2020 to 2040.

The CfWI report principal demand projection estimated that demand for both anaesthetists and ICM services would increase from approximately 6,100 FTE to 11,800 FTE from 2013 to 2033. This is equivalent to approximately 289.8 FTE per year on average. It is not possible to make a direct comparison with this figure, as the CfWI estimate is only for the anaesthetic workforce in England, and includes the demand for ICM services. Furthermore, the CfWI assumes that at baseline (in 2013) demand was equal to supply, whereas, this analysis assumes a current and existing gap between supply and demand at baseline (in 2020).

The Medical Workforce Census (2020) asked how many new posts were envisaged to be needed over the next two years. The census did not differentiate between new posts and replacement posts. In total, departments estimated that they would need to recruit 1,701 staff over two years, comprising 1,104 new consultants, 471 SAS doctors, and 126 anaesthesia associates. In this analysis, the difference between current supply and demand was estimated using the aspirational workforce gap, reported to be 11.8% for consultants and 18.4% for SAS doctors. In the base case of this analysis, assuming that the current trajectory of workforce supply continues (growing at a rate of 1.54% each year), the workforce gap in two years is estimated to be 1,265 FTE. This may suggest that the size of the current workforce gap may be larger than estimated in this analysis. Furthermore, as our analysis has included locum staff in the workforce estimate, this may also support stakeholder opinion that the current locum workforce may be hiding a workforce gap, and that these roles should be replaced by full time staff.

The RCoA Workforce Data Pack (2018) report estimated that to keep up with patient demand whilst accounting for retirement attrition, the number of anaesthetic consultants in England must increase by 417 per year by 2027. In the base case of this analysis, the size of the anaesthetic workforce would need to rise from 10,710 FTE to 13,013 FTE from 2020 to 2027 in order to meet demand for anaesthetic services. This is equivalent to 329.0 FTE per year on average from 2020 to 2027.

5.1 Strengths and Limitations of the Analysis

The strength of this analysis is that it uses robust data from the 2020 Medical Workforce Census to estimate the size of the current anaesthetic workforce. The stakeholder workshop included over 15 experts, which provided a rich source of information outlining factors that contribute to future demand and supply of the anaesthetic workforce.

By their nature, there are several limitations associated with the future projections of both demand for, and supply of anaesthetic services.

Although the stakeholder workshop identified the inflows and outflows of the workforce and predicted external factors in descriptive terms, it is not possible to accurately quantify the impact that external factors will have on rate of inflow and outflow. We also do not know how elastic supply will be to changes in these factors. Furthermore, we do not sufficiently know to what extent some factors currently play in the workforce. For example, stakeholders discussed a potential increase in NHS consultants moving to private care. However, we do not know whether this is any different to the rate at which people moved to private care in previous years. As such, estimates of the required number of FTE have been provided which assumes that factors that have influenced the workforce inflows and outflows from 2010 to 2020, will remain consistent for future years up to 2040. This is a reasonable assumption in the absence of more detailed evidence.

This analysis has presented results of demand and supply forecasts which have been estimated using the CfWI multipliers that were calculated from the Delphi panel exercise in 2015. Results were also presented when adjusting one of the CfWI multipliers, in line with opinions elicited from the stakeholder workshop. The updated and adjusted multiplier was subjective and based on assumptions with no new quantifiable evidence to support them.

This analysis has not been able to estimate the demand by type of anaesthetist (i.e. consultant or SAS Doctor). The implication of this assumption is that one FTE unit of demand is met by one FTE unit of supply. In reality, it will be the case that different anaesthetic services are provided by different types of anaesthetist. This point was highlighted in the stakeholder workshop, and noted that the burden of an increase in the ageing population falls more on experienced senior anaesthetists. This report is unable to conclude on the level and type of anaesthetist that would need to be trained in order to meet demand.

5.2 Conclusion

The base case results of this analysis estimate the total supply of anaesthetists would need to increase by an additional 216.7 FTE per year on average, from 2020 to 2040 in order to meet demand. Additional scenarios considered that on average, individuals' demand for health continues to rise year on year, workforce efficiency and productivity has decreased, and additional roles outside of theatre work (e.g. perioperative care) will require more anaesthetists time to meet the same amount of patient need relative to today. When these factors are considered, it is estimated that demand will exponentially outstrip supply to 2040, and the anaesthetic workforce would need to increase by 637.9 FTE (scenario 1) and 735.7 FTE (scenario 2) from 2020 to 2040.

Although there is material uncertainty in the estimates of FTEs required to meet potential demand for anaesthetic services, evidence from the stakeholder workshop, combined with the analysis in the CfWI report and a recent BMA report, suggests that demand will be likely to continue to outstrip supply over the next 20 years without any intervention. On that basis, action is required to improve workforce retention, increase the number of trainees and improve specialty training fill rates, in order to increase the size of the anaesthetic workforce.

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7 Appendix A – Members of the Stakeholder Workshop

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Dr Krish Ramachandran Chair, Anaesthesia - fit for the future Advisory Board, RCoA
Professor Ramani Moonesinghe National Clinical Director for Critical and Peri-Operative Care, NHSE/I
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