



**CENTRE  
FOR  
WORKFORCE  
INTELLIGENCE**

# Securing the future workforce supply

## Obstetrics and gynaecology stocktake



**January 2015**

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# Executive summary

The Centre for Workforce Intelligence (CfWI) was commissioned by the Department of Health (DH) and Health Education England (HEE) to conduct a stocktake review of the obstetrics and gynaecology (O&G) workforce in England. The review has a particular focus on fully trained obstetricians and gynaecologists with a certificate of completion of training (CCT holders), typically employed as consultants.

The CfWI has estimated the future level of workforce supply that would be needed to maintain current levels of O&G service on a per-patient basis. It has also considered the number of higher specialty training numbers required to ensure supply is broadly in balance with expected patient demand by the end of the projection period (2028). Additionally, the CfWI has also provided an estimate about the O&G workforce that would be required to deliver a robust consultant-led seven-day service. This report has been provided to HEE and will help inform the decisions it makes as part of its annual workforce planning process.

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## The CfWI approach

This review is a CfWI workforce stocktake – a report which investigates the current balance of demand and supply for a particular workforce and explores how this is expected to change in the medium term. For this project the CfWI took a view to 2028. Recognising the complex set of interrelated factors that may influence demand and supply, the CfWI's stocktake approach consists of horizon scanning, a specialist Delphi panel exercise to quantify key uncertainties, and building a system dynamics workforce model. The Delphi method is a technique that relies on a panel of specialists to estimate key future uncertainties (such as future patient need), taking into account a combination of factors, including the drivers gleaned from the horizon scanning stage.

This stocktake has been aided by extensive stakeholder engagement over the course of the project. Please see **Annex A** for more details.

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## Previous findings

This report builds on the previous CfWI review of the obstetrics and gynaecology specialty in England (CfWI, 2011a), which concluded that the O&G workforce faced CCT overproduction, and recommended 'a **sustained reduction of 40 NTN, phased over four years**'. This would have seen a reduction in specialty training level one (ST1) posts to around 160 by 2014 (CfWI, 2011b). However, this reduction has not occurred to date.

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## Key findings

### *The current workforce*

**The O&G consultant workforce has grown strongly over the past decade** from 1,253 full-time equivalents (FTE) in 2003 to 1,872 (FTE) in 2013 (HSCIC, 2014). This is a 53 per cent increase or a compound annual growth rate of 5.5 per cent. O&G consultants account for around one in 20 (4.8 per cent) of the total medical consultant workforce, including general practitioners (GPs).

Most consultants in the specialty work in both obstetrics and gynaecology. The latest figures from the Royal College of Obstetricians and Gynaecologists (RCOG, 2014c) indicate that 67 per cent of consultants practise both obstetrics and gynaecology, 19 per cent practise gynaecology only, 11 per cent specialise in obstetrics only, and for 3 per cent of all current CCT holders, data was not available.

The number of women in the O&G workforce has increased from around 200 in 1998 to over 893 in 2013. As of 2013, just under half (47 per cent) of O&G consultants were women. The proportion of women in the O&G workforce is likely to continue to rise. Of all doctors in specialty training in O&G, 81 per cent from 2014 onwards are women, based on the 2013 intake gender split (RCOG, 2014b) and existing specialty trainees.

There has been an overall increase in the average individual participation rate (the extent to which consultants work full-time or part-time). The average participation rate over the last 15 years is 0.93 for women and 0.94 for men.

### *Postgraduate training*

O&G specialty training in the UK is a run-through programme completed following two years of foundation training. Postgraduate specialty training takes a minimum of seven years to complete.

The number of filled posts (accepted offers) has been relatively steady between 2007–08 and 2013–14, averaging 204 posts per year. In 2013–14 there were 207 ST1 accepted offers in England.

The competition ratio for the O&G specialty fell from 8.8 applications per vacancy in the 2007–08 recruitment round to 2.4 in 2013–14, a decrease of 73 per cent. However, the fill rate has remained at or near 100 per cent over the last six years (RCOG, 2014b).

According to an RCOG survey, there is a high attrition rate of doctors in training during the first three years of O&G specialty training (RCOG, 2014a) with heads of specialist schools estimating that 18 per cent of the ST1s appointed in 2008 had left the specialty and either moved to another specialty programme or left postgraduate training entirely. The CfWI took this attrition rate into account for the estimate of future supply of O&G CCT holders.

Currently, O&G is only one of three medical specialities (with a headcount above 20) with a trainee-to-consultant ratio greater than 0.9, reflecting the high level of postgraduate intake.

### *Activity and productivity*

There has been an overall increase in O&G activity, with a shift towards community-based care, as a modest decline in inpatient activity (-5.75 per cent) was more than offset by a 34 per cent increase in outpatient finished consultant episodes (FCEs) between 2005–06 and 2012–13. Overall, O&G activity rose by almost 23 per cent or 2.6 per cent per annum.

The results show an average annual change of -1 per cent in total O&G activity per consultant FTE between 2005–06 and 2012–13 (HSCIC, 2013c, 2013d). This is because, even though there was an increase in total activity, the consultant workforce grew at an even faster rate. This figure is lower than our Delphi panel's median estimate of around -0.2 per cent decline in productivity per annum in the 15 years to 2028, and is well below the average 0.4 per cent growth in NHS productivity over the last 15 years (ONS, 2012). **However, it should be noted that activity per consultant is a purely quantitative measure, and does not take account of possible changes to quality or complexity, or any changes to the size and skill mix of the wider clinical and administrative support team. Patient experience is another outcome measure not accounted for in our**

assumptions. It has been noted that more frequent and longer consultation times are proposed by the DH as the factor that would improve this variable (DH, 2013).

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## Modelling results

### *Baseline demand and supply*

Our baseline demand projection forecasts a 3.5 per cent increase in patient demand for O&G CCT holders from 2013 levels by 2028, to around 1,920 FTEs. **The projection focuses only on CCT holders and does not include doctors in postgraduate training.** This projection reflects demographic factors (population growth and changing age composition) and hospital episode activity levels. This would be an annual growth rate of just 0.3 per cent.

By contrast, our baseline workforce supply projection forecasts a 67 per cent increase in the number of O&G CCT holders, to around 3,110 FTEs, by 2028. This would be an annual growth rate of 4.8 per cent.

### *Principal projections to maintain current level of service*

Our principal projection (or expected future) forecasts a 17 per cent increase of **patient demand** for O&G CCT holders from 2013 levels by 2028, to around 2,180 FTEs, a compound annual growth rate of 1.1 per cent. This projection reflects demographic factors (population growth and changing age composition) and intrinsically uncertain variables considered by our Delphi panel such as rising average individual patient need (10 per cent) and decreasing productivity (3 per cent).

Our principal projection for **workforce supply** forecasts a 53 per cent increase in the number of O&G CCT holders to around 2,840 (FTE) by 2028. This would be an annual growth rate of 3.5 per cent. This projection reflects the total number of O&G trainees in specialty training in 2013, the average number of doctors in training going into ST1 based on 2008-14 recruitment data, length of training, trainee and workforce attrition, and gender split.

By contrast, our Delphi panel expects the level of commissioned O&G consultant time will be just 7 per cent higher by 2028. Should the number of additional consultant places commissioned be in line with this estimate, or with expected patient demand, there will be insufficient new consultant posts to absorb the projected supply of new O&G CCT holders.

**The CfWI's assessment is that if the O&G ST1 intake is held at current levels (about 204 new doctors in training per year) there is a high risk of CCT holder and workforce oversupply across the entire projection period to 2028.** Without an immediate, substantial and sustained reduction in trainee intake, the demand-supply gap will continue to widen over the projection period.

Due to the high number of doctors already in training, any change in commissioned training posts from 2015–16 will only slow the growth of the workforce after 2022. The baseline demand and supply projection anticipates an oversupply of around 1,200 CCT holders (FTE) in O&G by 2028. The demand and supply principal projection anticipates an oversupply of around 660 CCT holders (FTE) in O&G by 2028.

### *The potential impact of seven-day consultant presence*

Our principal demand projection does not take into account the possible impact of demand due to the drive towards consultant-delivered care seven days a week. The Academy of Medical Royal Colleges (AoMRC)



identified obstetrics and gynaecology as a specialty that should have a seven-day consultant presence (AoMRC, 2012). The NHS has not fully implemented those initial recommendations on minimum staffing by trained specialists. However, the CfWI attempted to estimate the number of consultants required to provide seven-day consultant-delivered care in England for obstetrics.

Regarding the CfWI's assumptions around the possible configuration of services to deliver seven-day consultant-present care, it is important to note these assumptions are made for the purpose of exploring the possible range in the increase in the number of CCT holders that may be required to deliver seven-day consultant-present care. They are not intended to suggest any particular configuration of services.

Our estimates take into account the number of deliveries per consultant in labour wards across England, and an assumption that the coverage is needed only for obstetricians. We modelled a low- and high-case scenario based on estimates of percentage time spent on obstetrics-only activity by O&G CCT holders.

**Our estimates show that between 180 and 500 (FTE) additional CCT holders may be required for the seven-day coverage for obstetrics.**

**Even if there is a drive towards provision of seven-day consultant-delivered service in major labour wards in England, future workforce supply is still likely to outstrip patient demand.**

Based on our baseline demand and supply projection, and the inclusion of seven-day consultant presence coverage, there is a risk of an oversupply of between 690 and 1010 (FTE) O&G CCT holders by 2028. Based on the principal demand and supply projection, and the inclusion of seven-day consultant presence coverage, there is a risk of an oversupply of between 160 and 480 (FTE) O&G CCT holders.

Our calculations made for seven-day services are estimates of the average amount of activity that could be spent only on gynaecological services when related to the workload during the night. Please see **Annex E** for the full breakdown of CfWI scenarios and calculations for seven-day consultant-present care.

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## Next steps

*The CfWI suggests that HEE considers an immediate, substantial and sustained reduction in ST1 recruitment to reduce the level of CCT oversupply and to narrow the supply-demand gap over the longer term.*

The CCT oversupply that CfWI warned of in 2011 is likely now to persist over the whole projection period to 2028. The CfWI recognises that the specialty view is that without trainees, someone else will need to deliver the service element of these posts, and this is likely to be the consultants. With this in mind, we have modelled three illustrative options for reducing training commissioning for HEE to consider.

- **Illustrative option one is a sustained and cumulative 15 per cent reduction in ST1 intake:** a reduction in training intake by 5 per cent per annum or about 30 fewer NTN posts in total, spread over the next three recruitment rounds (2015-16, 2016-17, and 2017-18). This would result in average yearly recruitment reducing from about 210 to 180 from 2017-18 onwards and would see a modest reduction in projected CCT holder supply to around 2,730 (FTE) by 2028 and an average number of doctors in training of about 1,200 (FTE). The 5 per cent per annum reduction in training numbers would only start impacting supply from around 2022 due to the current high number of doctors in training and the average training length being 7 to 10 years.

- **Illustrative option two is a sustained and cumulative 30 per cent reduction in ST1 intake:** a reduction in training intake by 10 per cent per annum or about 60-65 fewer NTN posts in total, spread over the next three annual recruitment rounds (2015-16, 2016-17, and 2017-18). This would see average yearly recruitment reducing from about 210 to 150 from 2017-18 onwards, resulting in a projected workforce supply of around 2,620 (FTE) O&G CCT holders by 2028 and an average number of about 1,000 (FTE) doctors in training.
- **Illustrative option three is a sustained and cumulative 45 per cent reduction in ST1 intake:** a reduction in training intake by 15 per cent per annum or about 95 fewer NTN posts in total, spread over the next three annual recruitment rounds (2015-16, 2016-17, and 2017-18). This would result in average yearly recruitment reducing from about 210 to 115 from 2017-18 onwards and will see a supply of around 2,520 (FTE) CCT holders by 2028 and an average number of about 800 (FTE) doctors in training.

*The CfWI proposes that a further workforce review be conducted before the end of 2017.*

It is important that a further review takes place before the end of 2017, as any changes to alter supply from 2022 onwards must be implemented in time for the 2018-19 annual recruitment round. We also suggest that the next review take a whole-team, multi-professional approach, looking at wider clinical professions.

Following discussions with stakeholders, the CfWI acknowledges that future uncertainties (such as changes to service commissions, seven-day consultant-delivered care, the impact of productivity, and the *Shape of Training* review (Greenaway, et al., 2014)) are difficult to estimate. As mentioned earlier, the potential impact of the introduction of seven-day services (including the affordability, patient safety, and outcomes) on the O&G workforce merits further analysis in future. However, even if there is a drive towards the provision of seven-day consultant-delivered service in major labour wards in England, future workforce supply is still likely to outstrip patient demand.

**Finally, the CfWI would like to thank the obstetricians, gynaecologists, other health professionals, professional bodies, employers, and patients who contributed to this workforce stocktake. The CfWI welcomes all responses to this report. The project team can be contacted at: [medical@cfwi.org.uk](mailto:medical@cfwi.org.uk).**



# 1. Introduction

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## 1.1 About this stocktake

The Centre for Workforce Intelligence (CfWI) was commissioned by Health Education England (HEE) and the Department of Health (DH) to undertake a stocktake of the obstetrics and gynaecology (O&G) workforce in England with a particular focus on fully trained obstetricians and gynaecologists with a certificate of completion of training (CCT holders) who typically are employed as consultants. The CfWI was asked specifically to:

- assess the key drivers of demand and supply for O&G CCT holders
- estimate the future number of CCT holders needed to maintain current levels of O&G services per patient up to 2028
- estimate how many O&G specialty trainees need to enter core training (CT) to ensure workforce supply is broadly in balance with expected demand to 2028.

Additionally, the CfWI has provided an estimate of the O&G workforce that would be required to deliver a robust consultant-led seven-day service.

A previous CfWI report published in 2011 (see section 1.3) recommended a sustained reduction of 40 national training numbers (NTNs) phased over four years and a further workforce review of this specialty in 2013. This new report has been provided to HEE and will help inform the decisions it makes as part of its annual workforce planning process in England.

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## 1.2 Stakeholder engagement

The CfWI approach involved engaging with a broad range of professional representatives with specialist perspectives on the O&G workforce, including the Royal College of Obstetricians and Gynaecologists (RCOG) and the O&G Specialty Educational Advisory Committee (SEAC). This engagement was both to improve the quality and credibility of the CfWI's approach and to improve stakeholders' understanding of the intelligence contained in this review and its potential to support decision-making.

Information provided by these representatives is used throughout the report, and the report includes perspectives and analysis derived from available data.

We would like to thank all stakeholders for their contributions, while also noting that our conclusions and suggestions may not necessarily reflect those of the individuals and organisations consulted. For a full list of stakeholders involved at each stage of this project, please refer to **Annex A**.

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## 1.3 Previous CfWI recommendations

This report builds on the CfWI's previous assessment of the obstetrics and gynaecology specialty (CfWI, 2011a), which concluded the O&G workforce was facing 'CCT overproduction, expected from about 2014', and recommended 'a sustained reduction of 40 NTNs, phased over four years. The report added:

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‘Considering maternity weighted capitation and weighted live births alone, it is recommended that the greatest reductions should be in London, the North East and the North West strategic health authorities (SHAs) to achieve more even distributions across the country.’

If implemented, this would have seen a reduction in specialty training level one (ST1) posts to 160 by 2014 (CfWI, 2011b). However, no reduction in postgraduate specialty commissioning has occurred to date (see Annex 1 of HEE, 2013b).

The O&G specialty was also identified for a further review in 2013 ‘to monitor implementation progress’.

Since this review, we have built a new system dynamics O&G workforce model and refined several of our modelling assumptions using a Delphi panel. Our approach is outlined in more detail in Section 4 below. However, our broad conclusions are unchanged: an excess intake of postgraduate trainees has led to an oversupply of O&G CCT holders. **Both the risk and likely magnitude of workforce oversupply has increased as no reduction in training posts has taken place to date.**

## 2. Context

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### 2.1 Policy considerations for future demand

#### *RCOG guidelines for the future O&G specialists*

The Royal College of Obstetricians and Gynaecologists report *Tomorrow's Specialist* (RCOG, 2012) describes how O&G specialists may work in the future. The College has taken a view that:

- obstetrics and gynaecology can no longer be a largely hospital-based discipline
- obstetricians and gynaecologists should be involved in all stages of a woman's life, actively promoting healthy lifestyles and the prevention of illness
- obstetricians and gynaecologists should work closely with other healthcare professionals in the community as well as in the hospital
- the delivery suite needs fully qualified obstetric specialists available at all times, seven days a week
- care should be 'localised where possible, centralised where necessary'.

#### *Seven-day consultant presence*

The Academy of Medical Royal Colleges (AoMRC, 2012) identified obstetrics and gynaecology as a specialty that should have a seven-day consultant presence. The seven-day recommendation builds on previous guidelines (RCOG, 2005, 2012). The RCOG also recommends that consultants staff obstetric units seven days a week (RCOG, 2012). The RCOG's latest guidance also makes recommendations regarding changes to education and training, professional support, workforce development, and service delivery. This is in line with the overarching principles of improving outcomes for women and their babies, and promoting lifelong learning.

NHS England (2014b) is working to ensure that maternity services are delivering high-quality care for patients, seven days a week.

#### *Patient safety and quality of care*

Decisions around staffing requirements must also take into account recent calls for improvements in patient safety and quality of care. The Berwick review into patient safety (Berwick, 2013) highlights four key principles:

- putting patient safety first
- listening to patients and carers
- staff learning and development
- transparency.

The final report of the *Mid Staffordshire NHS Foundation Trust Public Inquiry* by Sir Robert Francis QC, published in February 2013, also makes recommendations for the NHS in response to concerns over mortality and standards of care (Francis, 2013). The main themes of the recommendations were to improve safety and quality of care, embed the patient voice throughout the system, improve leadership, and enable staff to raise the alarm when unsafe practice has taken place.

### *NICE guidance on midwife-led maternity care*

The National Institute for Health and Care Excellence (NICE) guidance on midwife-led care recommends that low-risk mothers should be advised to deliver their babies in a midwifery-led unit, as home and midwifery-led unit births are considered as safe as hospital births for these low-risk mothers (NICE, 2014). This means there may be a potential shift in maternity care service delivery away from traditional labour ward units to midwifery-led units.

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## **2.2 Policy considerations for future supply**

### *Current training route*

The present minimum training for a CCT in O&G is seven years, with specialty training commencing at specialty training year 1 (ST1) and concluding at ST7. The ST1-ST7 training is completed following two years of foundation training. UK training in O&G is divided into basic, intermediate and advanced levels of training. Doctors in training can develop specialty interests by choosing advanced training skills modules (ATSMs) at ST6 or by applying for subspecialty training. The CCT is the route to specialist registration for doctors who have completed a full training programme approved by the General Medical Council (GMC) (RCOG, 2013).

### *Future commissioning and configuration of services*

Maternity care is provided in several different healthcare settings, decided on a local basis by commissioning groups. There is an increasing call for safe, woman-centred, user-friendly services offering patient choice and improved continuity of care (DH, 2013).

Changes arising from new commissioning arrangements in England will have a major impact on the configuration of services for women. It is likely that these will influence other parts of the UK. Hospitals will have to reconsider their function in future health service design as elements of current hospital-based care shift into community and primary care settings. This will inevitably have an impact on traditional obstetric and gynaecological practice (RCOG, 2012). If services are consolidated into fewer obstetric units, the use of maternity networks may increase in the future to deliver integrated services across care settings.

### *European Working Time Regulation (EWTR)*

European Working Time Regulations were fully introduced in 2009 and state that no doctor (including doctors in training) can work longer than 48 hours a week (as averaged out over a six-month period). The EWTR law also set minimum requirements in relation to rest periods and annual leave. These changes have had an impact on working patterns of registrars and, to some extent, consultants.

### *Home Office changes to immigration rules*

The Department of Health approached the Home Office in 2005 about changing the immigration rules to limit further competition for training posts from international medical graduates (HoC, 2008). This resulted in restrictions to the provision of postgraduate doctors and dentists from 3 April 2006 (HoC, 2008). This policy implementation had an impact on the recruitment of international doctors to fill vacancies in the NHS (HoC, 2008).

### *The Shape of Training Review*

The *Shape of Training* review (Greenaway, et al., 2014), initially commissioned by Medical Education England (subsequently HEE), the Academy of Medical Royal Colleges (AoMRC), the General Medical Council (GMC) and others, gathered evidence from stakeholders to inform potential reforms in medical education and training in order to produce doctors who are adequately trained, able to provide safe and high-quality care, and meet the needs of patients and the health service in the future. The review considered training, patient needs and the balance between specialists and generalists (Greenaway, 2014). Under the proposed reforms:

- doctors will enter broad-based specialty training
- some specialties or areas of practice will be grouped together, reducing their number
- these groupings will be characterised by patient care themes (such as women's health, child health and mental health).

Effectively, there is likely to be little change to specialty training for O&G as the *Shape of Training* recommendations match the current O&G training programme (Greenaway, et al., 2014).

In parallel, the Royal College of Physicians (RCP) set up the Future Hospital Commission (FHC) to review the design and delivery of inpatient hospital care in order to improve safety and quality of care, in response to rising acute admissions, the ageing population and the increasing complexity of conditions. The final report, *Future hospital: caring for medical patients*, focuses on the care of acutely ill medical patients, the organisation of medical services, and the role of physicians and doctors in training across medical specialties in England and Wales (FHC, 2013).

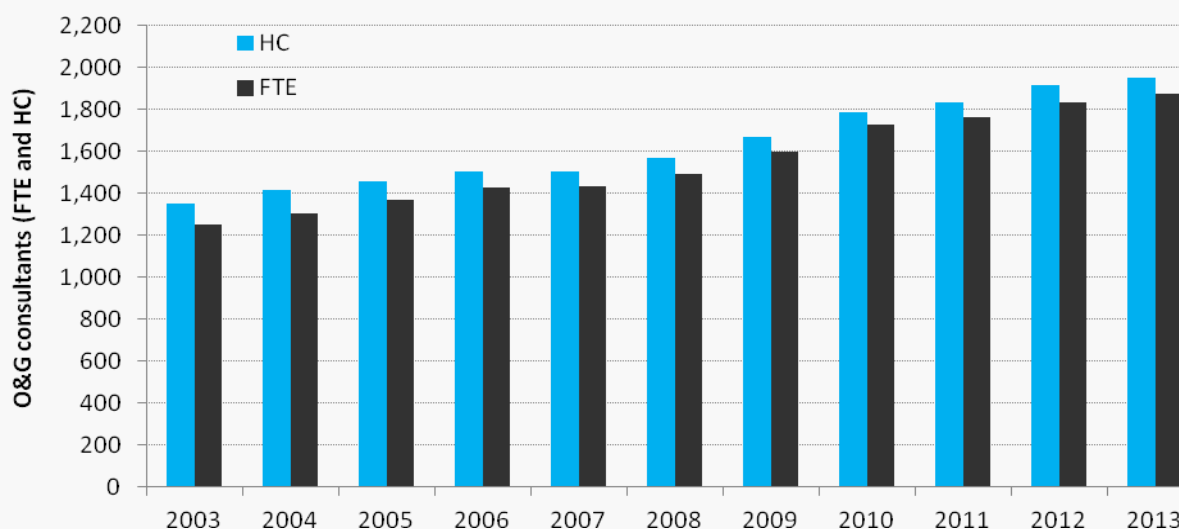
## 3. The current workforce

### 3.1 The consultant workforce

The Health and Social Care Information Centre (HSCIC) 2013 census reports that there were 5,826 (5,540 FTE) total staff employed in obstetrics and gynaecology in England as of September 2013, of which 1,915 on headcount basis (HC) (1,872 FTE) were consultants. The O&G consultant workforce has grown strongly over the past decade from 1,253 FTE in 2003 to 1,872 FTE in 2013 (HSCIC, 2014), a 53 per cent increase (a compound annual growth rate of 5.5 per cent). O&G consultants account for 28 per cent of the NHS consultant workforce, and 4.8 per cent of the total medical consultant workforce including general practitioners (GPs). The latest census results suggest 57 per cent of consultants practise both obstetrics and gynaecology, with 19 per cent practising only gynaecology and 11 per cent practising only obstetrics.

Many O&G consultants have a major special interest in a particular area, such as high-risk obstetrics, fertility care or minimal-access surgery. A smaller number of consultants work as subspecialists, with all of their work concentrated in a specific area of practice such as gynaecological oncology or feto-maternal medicine. In obstetrics, most uncomplicated deliveries are performed by midwives, but all obstetricians are also able to carry out a normal delivery.

Figure 1: Historical O&G consultant workforce, NHS, England



Source: HSCIC (2014)

#### 3.1.1 Subspecialties and related workforces

There are many professionals involved in the care of pregnant women, their babies and their families, including obstetricians, anaesthetists, midwives and GPs (Smith and Dixon, 2010). Obstetricians work closely with health professionals in midwifery and general practice as part of a multidisciplinary team delivering maternity services. Gynaecologists often work with specialist nurses in the treatment of disorders impacting the female reproductive system. The specialty of community sexual and reproductive health (cSRH) is closely

related to wider gynaecological services but this workforce is not considered in this report. Specialists in cSRH usually work in community-based services and are ideally positioned at the clinical crossroads between hospital-based gynaecological care, general practice and genitourinary medicine (GUM) (RCOG, 2013).

Most consultants are generalists but the specialty offers a wide range of subspecialties, which include fetomaternal medicine, gynaecological oncology, uro-gynaecology, reproductive medicine and community gynaecology. Surgical work involves close cooperation with other specialties such as urology and colorectal surgery, and clinicians working in clinical and medical oncology. The medical aspects of the specialty involve liaison with endocrinologists, renal physicians and cardiologists (NHS Careers, 2013).

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### 3.2 Age and gender profile

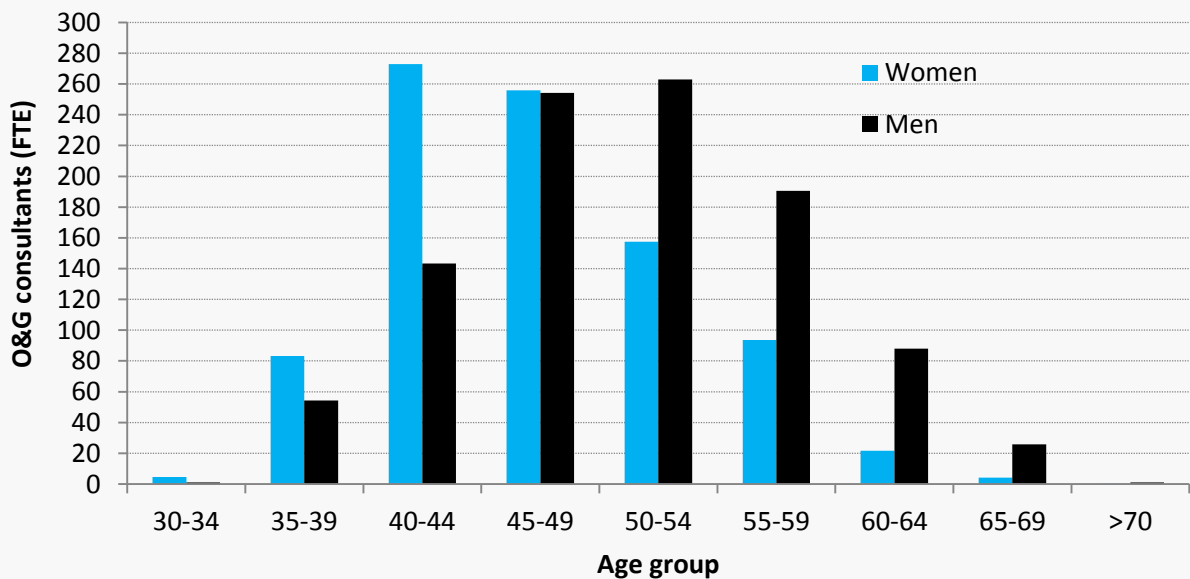
The number of women in the O&G workforce has increased from around 200 in 1998 to more than 893 in 2013 – an increase of 347 per cent. As of 2013, 47 per cent of O&G consultants are women. Over the same period that saw the number of women in the specialty grow, figures indicate an increased participation rate (i.e. the extent to which consultants work full time or part time with 1.0 being full time) for women from 0.89 in 1998 to 0.95 in 2013 (HSCIC, 2014). The latest HSCIC data shows the younger O&G consultant workforce is predominantly women, as opposed to the O&G workforce aged 50 and older (see Figure 2) (HSCIC, 2014).

The number of men in the workforce increased from around 800 in 1998 to 1,021 in 2013 – a growth of 28 per cent. Overall, the participation rate has grown over this time (with the exception of 1999 to 2011 when it fell to 0.91). Our Delphi panel predicted the participation rate will be 0.90 for men and 0.83 for women by 2028, despite an increase in recent years. Although our Delphi panel predicts the participation rate for women will decrease to around 0.83 by 2028, historical data shows the participation rate for women has grown up to 0.95 (HSCIC, 2014).

There has been an overall increase in the average individual participation rate over the last 15 years from 0.89 in 1988 to 0.95 in 2013 for women and from 0.94 in 1988 to 0.95 in 2013 for men (HSCIC, 2014). The proportion of women in the O&G workforce is likely to continue to rise. Of all doctors in specialty training in O&G, 81 per cent are women, based on the 2013 intake gender split (RCOG, 2014b) and existing specialty trainees.



Figure 2: O&G consultant age and gender profile, England, 2013

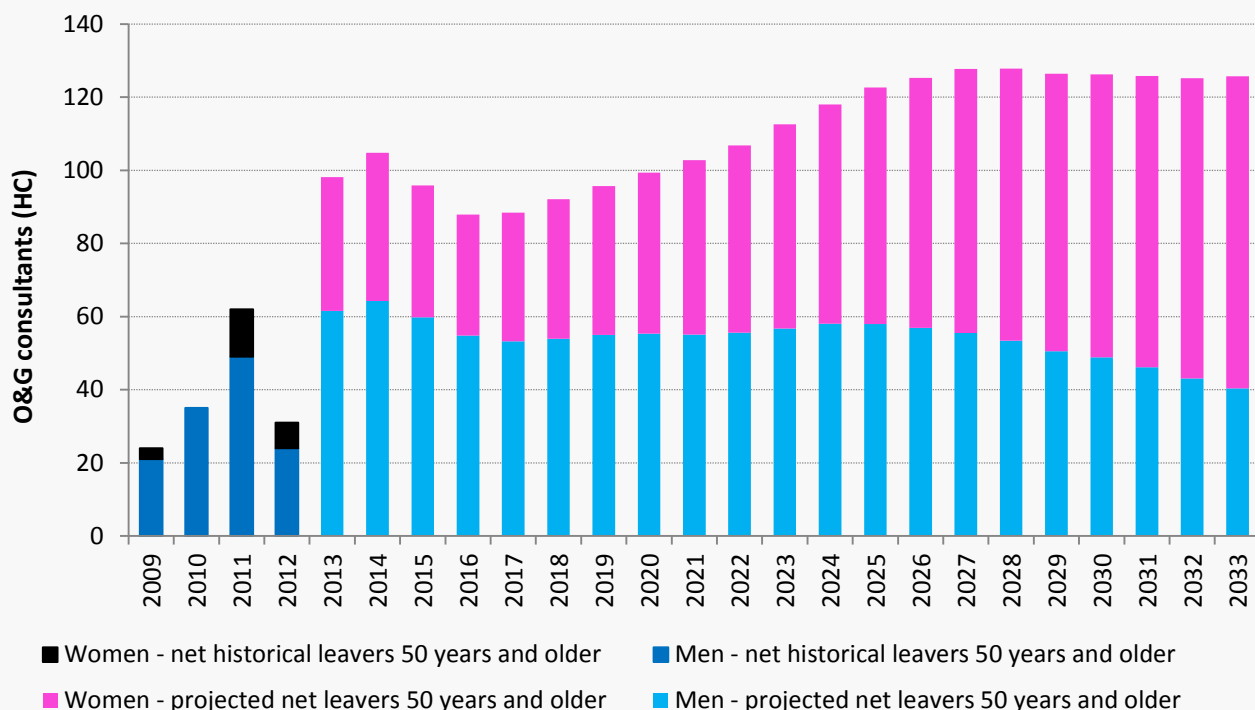


Source: HSCIC (2014)

### 3.3 Retirement and rejoiners

The CfWI takes into account the net number of consultants – CCT or Certificate of Eligibility for Specialist Registration holders (CESR) – in the NHS workforce who leave and never return. The percentage of consultants leaving the workforce per year is estimated by looking at the historical numbers over the past five years. These percentages take into account any rejoiners, such as those who have retired and returned to practice and/or those coming back from career breaks. The average retirement age is 65 years for men and 62 years for women consultants in O&G (HSCIC, 2014). The Delphi panel estimated that the average retirement age will remain the same for men by 2028, staying at 65, while it will increase by three years for women, rising to 65 years.

Figure 3: Historical and projected O&G consultant net retirements per year, by gender



Source: HSCIC (2013) and CfWI system dynamics model of the O&G CCT holder workforce for England

### 3.4 Postgraduate training

O&G specialty training in the UK is a run-through programme completed following two years of foundation training. The specialty training is divided into two years of basic training commencing ST1, three years of intermediate training at ST3–ST5 and two years of advanced levels of training at ST6–ST7. Doctors in training can develop a specialty interest by choosing training in advanced training skills modules (ATSMs) at ST6 or by applying for subspecialty training. After completing ST7, successful candidates will be awarded a CCT (RCOG, 2013). The current O&G specialty training programme was introduced in 2007. Therefore national recruitment training data is limited to the past six years for ST1.

All stakeholders agree that, for modelling purposes, the only sources of joiners to the CCT workforce are through the specialty training system and the CESR route, because the number of joiners from elsewhere is small and therefore not statistically significant.

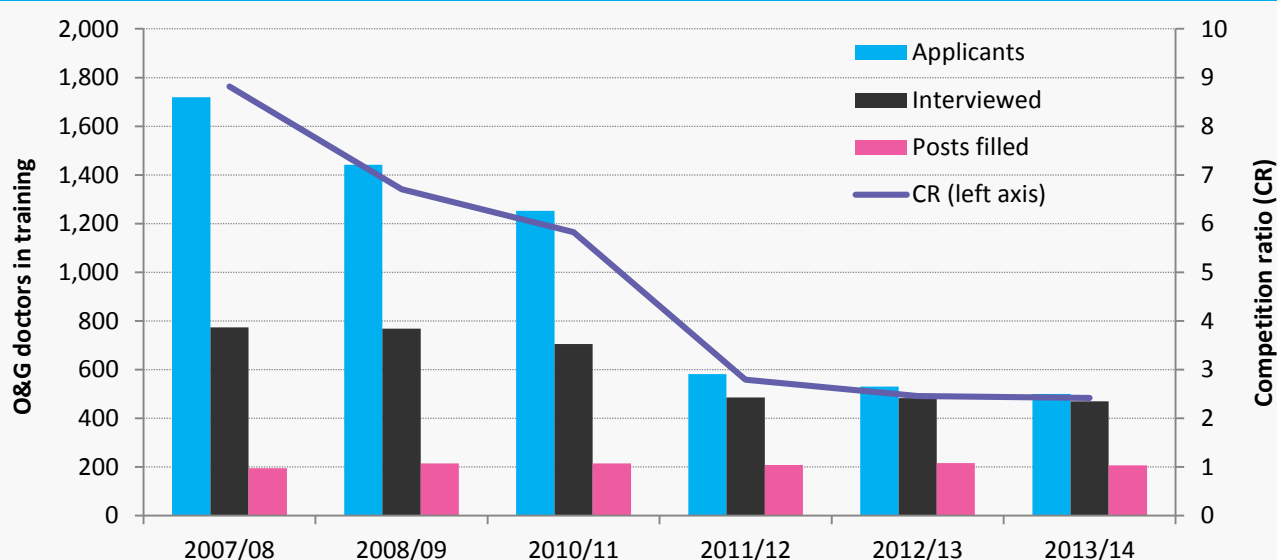
The RCOG coordinates national selection and recruitment for O&G ST1 posts. The SEAC develops the content and structure of the training programme, which is then approved by the General Medical Council. The competition ratio for O&G specialty fell from 8.8 in the 2007/08 recruitment round to 2.4 in 2013/14 – a decrease of 73 per cent (see Figure 4). The specialty remains popular, achieving 100 per cent fill rates between 2007 and 2014 (RCOG, 2014b).

The total number of O&G doctors in specialty training posts is 1,779, with the total number of doctors assigned a NTN<sup>1</sup> being 1,836 (not including those in academic posts) (HEE, 2013a). The higher number of NTNs includes those who are currently not in training (for example due to maternity leave or out-of-training activity). The number of filled posts (accepted offers) has been steady at an average of 204 per year between the 2007/08 and 2013/14 recruitment rounds. Currently, O&G is only one of three specialities (headcount >20) with a trainee-to-consultant ratio greater than 0.9:1. The other two specialities with such a high trainee-to-consultant ratio are paediatrics and public health medicine (HEE, 2013a).

There is a high attrition rate of doctors in training during the first three years of O&G specialty training (RCOG, 2014a). A recent survey of heads of schools estimated that 18 per cent of the ST1s appointed in 2008 had left the specialty and either moved to another specialty programme or left postgraduate training entirely. The CfWI took this attrition rate into account for the estimate of future supply of O&G CCT holders.

The CfWI assumes that, from 2014, the majority of new doctors in specialty training will take, on average, seven years and seven months to complete their training (RCOG, 2014b).

Figure 4: Vacancies, applicants and accepted offers to O&G ST1 positions in England since 2007/08



Source: RCOG (2014b)

### 3.5 Education and academic workforce issues

Surveys of the heads of school of O&G and the trainees' committee representatives in England have shown a significant number of 'gaps' in current registrar rotas (RCOG, 2014a). These are due to a combination of

<sup>1</sup> NTN: A unique identifier issued by a postgraduate dean to an employee where the employee has formally accepted, or commenced, a training activity as a specialist registrar. The allocation of NTNs reflects the numbers of training places nationally, and the allocation of those numbers to each deanery.

various factors including maternity leave, less than full-time working, out-of-programme activity, and retention issues in the early years of the training (see 3.4 above).

These rota gaps are creating pressures that impact trainees by increasing service pressures and result in a significant number undertaking locum appointments for service (LAS) posts (RCOG, 2014a). Therefore they may be working hours in excess of the European Working Time Directive (EWTD). Locums for service and agency locums are also used (RCOG, 2014a). Combination of these factors may impact training opportunities. It is important to note that the issues described above refer to current educational training arrangements and a workforce situation that is likely to change in the future with growing O&G workforce supply and changing delivery models.

## 4. The stocktake process

### 4.1 The CfWI approach to workforce planning

To forecast and analyse future demand and supply for the O&G CCT holder workforce – looking ahead to 2028 – we used our robust workforce planning framework, as outlined in Figure 5. A CfWI workforce stocktake investigates the current balance of demand and supply for a particular workforce and explores how this is expected to change in the medium term. For this project we took a view to 2028. Recognising the complex set of interrelated factors that may influence workforce demand and supply, our stocktake approach consists of horizon scanning, a Delphi panel exercise to quantify key uncertainties, and the use of system dynamics modelling.

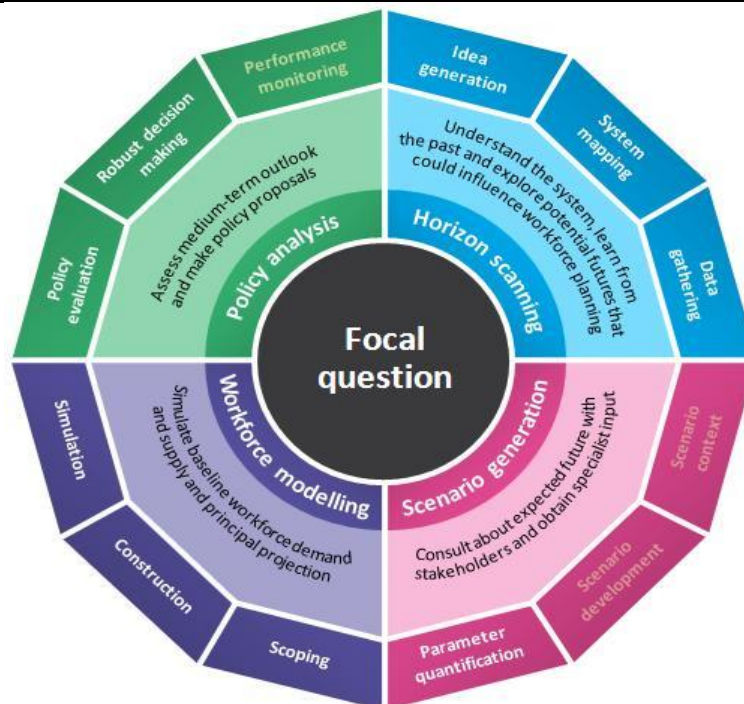
We also worked with key stakeholders and our commissioners to better understand the impact of certain policies and to explore possibilities for bringing supply and demand into balance. Detailed results of the horizon scanning are available in **Annex B**, and the Delphi questions and results in **Annex C**.

The key benefits of the CfWI stocktake approach are:

- supporting medium-term workforce planning
- accounting for the intrinsic uncertainty of the future
- alerting decision makers to emerging risks as the future unfolds.

**Figure 5: The CfWI workforce planning approach for stocktakes**

For stocktake reviews, the CfWI does not undertake the areas faded out in this diagram.



Source: CfWI

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## 4.2 Horizon scanning

Stakeholders were asked about potential technological, economic, environmental, political, social and ethical (TEEPSE) challenges, opportunities and likely future developments, and asked to provide supporting evidence, if available. These 'drivers' were used as a base to inform the Delphi process.

A summary of the key drivers (both trends and uncertainties) that may influence the future O&G workforce can be found at **Annex B** and on [www.horizonscanning.org.uk](http://www.horizonscanning.org.uk).

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## 4.3 Delphi panel exercise

The Delphi method is a technique that relies on a panel of specialists to estimate key future uncertainties (such as future patient need), taking into account a combination of factors, including the drivers gleaned from the horizon scanning stage. The purpose of the Delphi panel exercise is not to predict the future but rather to improve workforce planning by combining the expertise of panellists and to provide a model that establishes the most likely workforce demand profile(s).

The final (median) judgments of the panel are fed into the CfWI model to inform our 'principal projection' (or expected future). The median value is used rather than the mean value as it is less likely to be biased by outliers.

A Delphi panel is most effective when it contains a range of perspectives. The O&G panel comprised representatives with various perspectives on the O&G workforce, including service commissioners, providers/employers, educators, O&G consultants, midwives, O&G doctors-in-training, HEE, representatives from professional bodies and the SEAC. The panel composition and questions were signed off by HEE. The key questions and responses for the Delphi panel can be found at **Annex C**.

During the Delphi exercise, participants give rationales for their estimates. The quantity and quality of responses in this Delphi exercise was very high, demonstrated by the following examples:

In response to our efficiency and productivity question ('As a result of changes in efficiency and productivity, do you think the demand for obstetricians' and gynaecologists' time will change relative to today?') one stakeholder wrote:

I believe that whilst with the aid of improved technology, training and education the efficiency of the O&G CCT holder should increase, the real outcome will be a negative impact as the demand for a largely consultant-provided service increases with the complexity of the client group.

In response to the individual patient need question ('Do you think the average individual patient need for obstetricians' and gynaecologists' time will change, relative to today?') another stakeholder explained:

The expectations of the population for patient-focused discussion in the field of O&G are continually increasing and with that increased expectation is also the desire to be seen by a consultant. As a result, consultation times need to increase to accommodate this extended discussion. In procedural terms, the move to laparoscopic and minimal invasive surgery in gynaecology, whilst generally resulting in reduced hospital stay and recovery times, does require a longer operative time than for traditional open procedures. Obstetric intervention time is less likely to change as new ways of delivering babies are unlikely to be invented.

## 4.4 System dynamics modelling

System dynamics modelling is most appropriate for complex systems such as the health and social care workforce. It reflects changes to a system over time by using the analogy of stocks accumulating and depleting over time, and can be extended or revised to address additional issues as they arise. For workforce planning, 'stocks' of people can be segmented by age and gender where data exists, to increase the accuracy of supply forecasting.

Due to the complexity of factors influencing workforce demand and supply, and the intrinsic uncertainty of the future, the CfWI used Vensim DSS© to model the flow of O&G specialty training to forecast future demand and supply. The CfWI has formally tested and validated this model.

Vensim is able to handle the complexity of modelling supply, including the ageing of the workforce, and offers sophisticated sensitivity and uncertainty analysis, an important feature given the variable quality of data and assumptions available (see below).

## 4.5 Data sources, assumptions and exclusions

### 4.5.1 Main data sources

The references section lists all data and information sources used. The main data sources used in this stocktake are:

- HSCIC workforce data sets
- HEE stocktake data
- Office for National Statistics (ONS), 2012-based national population projections
- RCOG national ST1 intake data and workforce census (RCOG, 2014b)
- HSCIC hospital episode statistics (HES).



#### 4.5.2 Assumptions

The system dynamics workforce model used a series of assumptions when data was not of the required quality or was not available. These assumptions were reached by analysing past trends, engaging with the specialty and other professional representatives, and by the collective judgments of our specialist Delphi panel. The future supply and future demand sections below list all assumptions used, while the key questions and responses for the Delphi panel can be found at **Annex C**.

#### 4.5.3 Exclusions

The flows between England, the other three UK countries, non-UK and non-EEA countries have not been explicitly modelled. CfWI made an assumption that for modelling purposes the only important sources of joiners to the CCT workforce in England are through the specialty training system and the CESR route. The number of joiners from elsewhere is very small and not statistically significant.

Similarly, the impact of skill mix on demand and supply for O&G services has not been explicitly modelled. However, the CfWI acknowledges that effective planning for this workforce cannot be done in isolation from other medical/O&G specialties and non-medical workforces that provide essential support services.

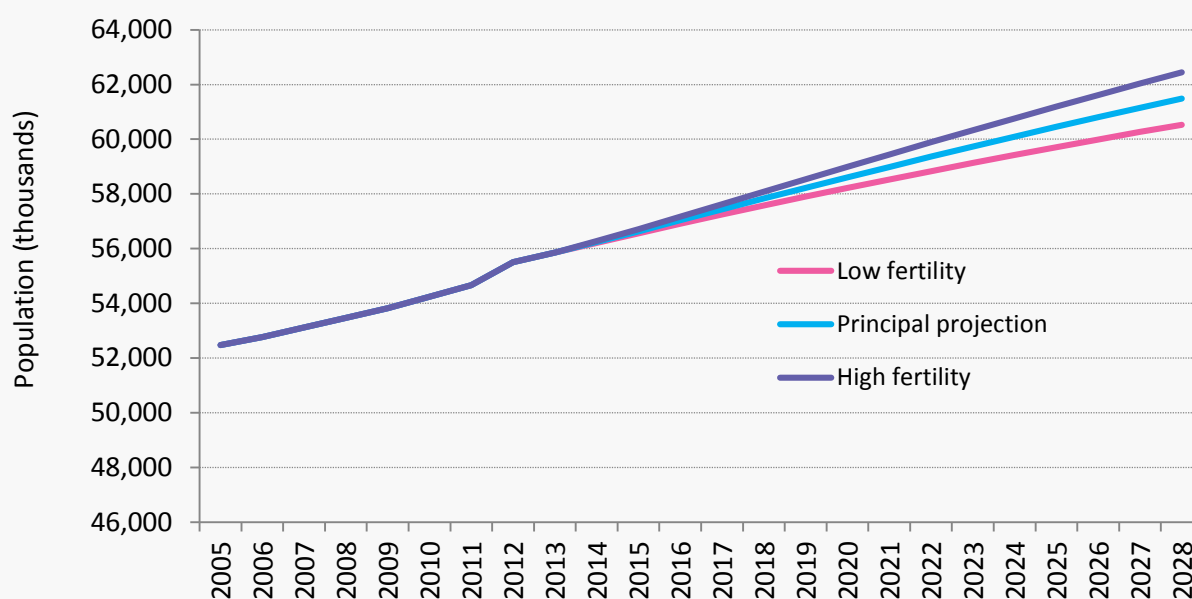
**A whole-team, multi-professional approach may enable more effective workforce planning. For this reason, we suggest a further review of the O&G workforce, including wider clinical professions, be conducted before the end of 2017.**

## 5. Birth rate, activity and productivity

### 5.1 Changing birth rate in England

The CfWI has considered the impact of changing birth rate and net immigration on future obstetricians' activity by using ONS fertility rate assumptions (low, principal and high, see Figure 5 ) (ONS, 2013).

Figure 5: Estimated and projected population for the years 2005 to 2028, England



Source: ONS (2013)

We calculated activity-weighted population demand (see Table 1). This shows that activity-weighted population demand varies between 3.1 and 3.6 per cent. The estimated overall demand varies between 16.8 and 17.4 per cent.

**Table 1: Summary of demand variation due to fertility rates**

	High	Principal	Low
ONS fertility rates	2.10%	1.90%	1.70%
CfWI estimated activity-weighted population demand	3.6%	3.4%	3.1%
CfWI estimated total demand	17.4%	17.1%	16.8%

**Source:** HSCIC (2013c, 2013d); ONS (2013)

We calculated future demand based on the ONS principal fertility rate, which resulted in a modest 3.4 per cent increase in demand due to activity-weighted population growth by 2028.

The ONS' population forecasts consider the latest data on births and therefore include the current impact of immigration (and other factors that may influence birth rates). They assume that the level of births will continue in the future, dependent upon which fertility rate assumption is used.

## 5.2 Activity and productivity

The CfWI analysed the number of O&G consultants against the O&G hospital episodes activity data between 2005-06 and 2012-13 (HSCIC, 2013c, 2013d and 2014). Overall O&G activity measured by finished consultant episodes (FCEs) for inpatients and outpatients was used for this particular measure as this report considers the O&G workforce as a whole.

There has been an overall increase in O&G activity and a shift towards community-based care, with a 5.75 per cent decline in inpatient FCEs over the past eight years more than offset by a 34 per cent increase in outpatient FCEs.

The number of FCEs for inpatient obstetrics decreased by 8 per cent between 2005-06 and 2012-13. Although gynaecological activity stayed roughly the same between 2005-06 and 2011-12, there was a recorded drop in activity in the last year. This resulted in an overall decrease of 4 per cent (HSCIC, 2013c, HSCIC, 2013d). Outpatient FCEs grew by 24 per cent for gynaecology and 51 per cent for obstetrics services during the same period (HSCIC, 2013c).

Overall O&G activity rose by almost 23 per cent or 2.6 per cent per annum between 2005-06 and 2012-13 (HSCIC, 2013c; 2013d). However, as the O&G consultant workforce grew by an even faster rate (31 per cent) over this period (HSCIC, 2013a), there was an average annual decline of -1.0 per cent in total O&G activity per consultant FTE. This figure is nonetheless lower than the median Delphi estimate of around -0.2 per cent annual decline in consultant productivity over the projection period 2013 to 2028, and is well below the average +0.4 per cent annual growth in NHS productivity seen over the last 15 years (ONS, 2012). In a climate of flat real funding and growing patient demand, the government should examine whether the NHS can afford continuing productivity decline in a key medical specialty.

An important caveat to this is that activity per consultant is a purely quantitative measure, and does not take account of possible changes to quality or complexity, or of the potential impact on O&G consultants' activity of rates of changes to the size and skill mix of the wider clinical and administrative support team. Patient experience is another outcome measure not accounted for in our assumptions. It has been noted that more frequent and longer consultation times are proposed by the DH as the factor that would improve this variable (DH, 2013).

Table 2: HES activity data between 2005-06 and 2012-13

Hospital Episode Statistics year	CCT year	Inpatients	Out-patients	Total activity	Consultants FTE	Activity per consultant
2005-06	2006	1,852,297	4,616,843	6,469,440	1,426	4,538
2006-07	2007	1,817,693	4,848,472	6,666,165	1,432	4,657
2007-08	2008	1,863,656	5,039,069	6,902,725	1,492	4,627
2008-09	2009	1,840,094	5,476,183	7,316,277	1,599	4,575
2009-10	2010	1,855,348	5,758,484	7,613,832	1,725	4,415
2010-11	2011	1,857,244	5,948,526	7,805,770	1,765	4,423
2011-12	2012	1,816,340	6,131,694	7,948,034	1,834	4,334
2012-13	2013	1,7495,947	6,189,927	7,935,874	1,872	4,239
<b>Growth over 7 years (%)</b>		-5.8	34.1	22.7	31.3	-6.6
<b>Compound annual growth rate (%)</b>		-0.8	4.3	3	4	-1

Source: HSCIC (2013c, 2013d, and 2014)

Productivity is one of the main levers to deliver efficiency savings. Greater productivity can be achieved by redesigning and streamlining healthcare services to minimise unnecessary processes and care that is not cost effective or has little impact on patient outcomes (NHS England, 2014b). It is possible that O&G consultant productivity could improve over the next 15 years, which would result in a considerably lower estimate of effective demand for CCT holders than the CfWI's current projection, and lead to greater CCT oversupply.

Clinical reference groups (CRGs) have an important role in providing advice about potential opportunities to improve productivity and efficiency, for example by removing inefficiency from care pathways or by identifying opportunities where national procurement of drugs or devices might reduce costs (NHS England, 2014b).

## 6. Future patient demand

Modelling future patient demand is both complex and uncertain. The CfWI's future demand calculation has three main components:

- current demand (defined by our commission remit: 'estimate the future number of CCT holders that would enable **current levels of O&G services per patient to be maintained** to 2028')
- the impact of changing population and demographics (population growth and the changing age composition of the population)
- future uncertainties such as changing average individual need, and changes to the productivity of the workforce.

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### 6.1 Current demand assumption

The CfWI set out to assess whether there will be an undersupply or oversupply of O&G CCT holders by 2028 if **current levels of O&G services per patient are maintained**. The CfWI therefore assumes current demand is equal to current supply, and this is the basis from which future demand is calculated.

Across the NHS there is always likely to be some unmet need. We are not suggesting there is no unmet need at present. It is important to note that workforce demand is the required workforce the NHS can afford. It is often confused with need, which is the required workforce if there were no financial constraints.

#### 6.1.1 Current unmet need

The Delphi specialist panel estimated that the median level of currently met need for O&G CCT holders is 80 per cent, with estimates ranging from 75 to 95 per cent (see **Annex C**). This implies around 20 per cent of current need is not being met. This is close to the average estimate of unmet need for most other medical specialties that the CfWI has reviewed to date.

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### 6.2 Changing population and demographics assumptions

Different age groups have different dependencies on medical/O&G services, so the CfWI considers not just overall population growth, but change to the population age profile.

The ONS forecasts that the population in England will grow by 11 per cent by 2028 (ONS, 2013) but there are large variations by age group, with the numbers in the 60+ age group forecast to grow by 36 per cent and those aged 20-29 years forecast to decline by 4 per cent. The number of people aged 40-49 years are forecast to decline by 5 per cent by 2028. Therefore each age group will have different impacts on future workforce demand projections.

The prevalence rates by age group for inpatients and outpatients for 2012-13 were determined using HES data (HSCIC, 2013c, HSCIC, 2013d). The CfWI assumed rates remain constant, and factored ONS population forecast by age group from 2013 to 2028, creating a prevalence-rate-weighted time series forecast of future demand based on population growth by age group.

For O&G, the group of women who use O&G services most (i.e. those aged between 15 and 59 years) is forecast to grow by only 2 per cent by 2028 (ONS, 2013). The older population (60 years and older) is forecast to grow significantly over the next 15 years. However, this age group constitutes only a small percentage of gynaecology service users overall. The resulting overall change in demand by 2028 is estimated to be 3.5 per cent, combining both inpatient and outpatient data, and the rise in demand due to the growing/ageing population. Detailed prevalence rate analysis is available in **Annex D**.

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### 6.3 Assumptions about future uncertainties

As well as the impact of population size and age profile, the CfWI also considered changes in demand caused by future uncertainties. Demand for healthcare is a difficult concept. For O&G CCT holders the CfWI examined two of its key components:

- **the future average need of patients**  
i.e. the average individual patient need for O&G CCT holders by 2028
- **the future productivity of the workforce**  
i.e. the impact of the efficiency and productivity of the O&G CCT holder workforce on demand by 2028.

These demand changes are influenced by the TEEPSE drivers, gathered during horizon scanning, and are most appropriately quantified by a range of specialists taking part in a Delphi panel exercise. The panel was asked to consider the potential impact of these drivers on the O&G CCT holder workforce. The CfWI's Delphi results suggest that by 2028, demand for O&G CCT holder time will be:

- 10 per cent higher due to average individual patient need (over and above the impact of demographics)
- 3 per cent higher due to declining efficiency and productivity.

In contrast, for the baseline demand projection we do not assume any changes to average patient need over the projection period, and assume that O&G CCT holder workforce productivity will improve by 0.4 per cent per year, in line with the average growth in NHS productivity over the last 15 years (ONS, 2012).

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### 6.4 Baseline and demand principal projections

The concept of a 'baseline' projection requires some explanation. 'Baseline' demand means the level of future demand assuming population growth and the age profile of the population continue as per current trends. However, the baseline does **not** include changes in patient expectations or the rise in the incidence of multiple morbidities and case complexity. It is likely that future patient demand for O&G consultants is underestimated in the 'baseline' projection – it is included for comparison purposes only.

Our baseline demand projections are based on:

- activities captured by hospital episode statistics - HES, 2011–12 inpatient and outpatient data (HSCIC, 2013c, HSCIC, 2013d)
- forecasts of population growth and ageing (ONS, 2013).

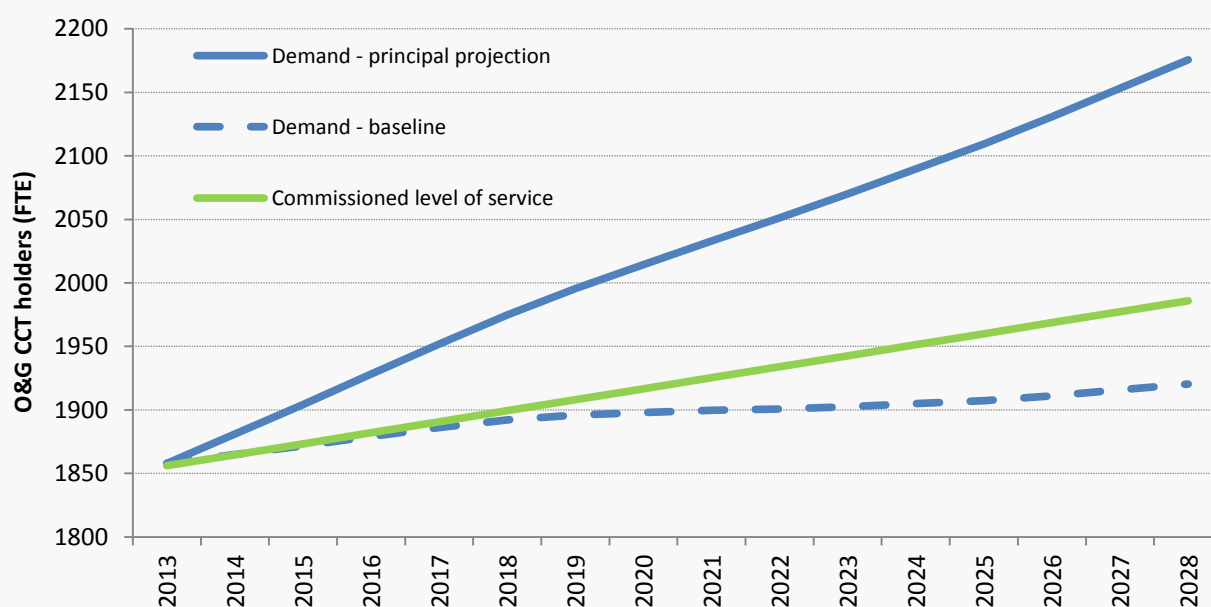
**Figure 6 shows the CfWI's baseline demand projection is forecast to grow to around 1,920 FTEs, an increase of around 3.4 per cent by 2028.**

The demand principal projection is the forecast of expected future demand, and is based on the following modelling assumptions, reached by existing data described above, and with the consensus of the Delphi panel:

- current demand is taken to equal current supply (defined by our commission remit)
- a 3.5 per cent increase due to population growth
- a 10 per cent increase in average individual patient need by 2028, derived from Delphi
- a 3 per cent increase in demand by 2028 due to declining workforce efficiency and productivity, derived from Delphi.

Figure 6 shows the CfWI’s demand principal projection for O&G CCT holders, with demand increasing year on year to reach 17 per cent growth by 2028, compared with 2013, a compound annual growth rate of 1.1 per cent. **The principal projection demand forecast for O&G CCT holders is therefore around 2,180 FTEs by 2028.**

**Figure 6: Demand baseline and principal projections for O&G CCT holders, England**



**Source:** CfWI system dynamics model of the O&G CCT holder workforce for England

The CfWI has also considered the **potential level of commissioned services** in the future. Delphi panellists were asked how much CCT holder time will be commissioned for obstetrics and gynaecology services by 2028, relative to today. The median estimate was an increase to around 1990 FTEs, of 7 per cent by 2028 (Annex C). As Figure 7 shows, this is higher than the baseline demand projection of around 3.4 per cent growth in patient demand by 2028 but lower than the principal demand projection estimate of a 17 per cent increase.



## 7. Future workforce supply

The CfWI's future supply calculation is informed by three broad components: trainees and specialty training arrangements, the workforce, and future changes to training and the workforce. For modelling purposes the CfWI made the following assumptions about training, derived from analysing past trends, engaging with the specialty, and the Delphi exercise results.

Please note the following are principal assumptions. They are presented as a balanced consideration of likely factors based on the data and information available to the CfWI at the time of this review.

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### 7.1 Training modelling assumptions

- There were 1,779 doctors in training in 2013.
- On average, 206 doctors in training will gain CCTs annually between 2015 and 2022, with an average of 171 gaining CCTs between 2022 and 2028.
- ST1 intake is held constant at 204 per year from 2014 (actual average ST1 intake).
- Specialty training takes an initial average of seven years and seven months to complete in 2013 but a proportion of doctors in training take up to 10 years to complete by 2028, therefore factoring in people taking slightly longer to gain a CCT on average.
- There is an overall training attrition rate of 2 per cent from 2014 to 2018 and 20 per cent attrition for all doctors who will gain their CCTs from 2019.
- 81 per cent of all trainees from 2014 onwards are women, based on the 2013 intake gender split.
- The age of doctors in training is factored into the model.

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### 7.2 Workforce modelling assumptions

- The current number of O&G consultants is 1,950 (HC) and 1,872 (FTE).
- There are no unemployed CCT holders and every new CCT holder is employed within 12 calendar months of gaining a CCT.
- The only joiners to the CCT workforce are through the specialty training system and the CESR route.
- There is zero intake into the CCT workforce from non-UK and non-EEA countries (all stakeholders agree that for modelling purposes the only sources of joiners to the CCT workforce are through the specialty training system and the CESR route, because the number of joiners from elsewhere is very small and not statistically significant).
- For the baseline supply projection we use the actual 2013 participation rates of 0.95 for women and 0.95 for men.
- For the principal supply projection we use the 2028 participation rate of 0.83 for women and 0.90 for men, according to our Delphi panel.
- In 2013, 45 per cent of the CCT workforce are women (HSCIC, 2014) rising to around 74 per cent by 2028. This results in an overall decreased participation rate for the workforce by 2028.
- The actual CCT holder age profile is factored into the model.
- The workforce attrition profile includes all leavers, including retirements. It is distribution based and increases with age, based on the net leavers for each age group of the O&G workforce over the period 2009 to 2012. Workforce attrition for consultants aged 50 years and younger is 1.5 per cent.

- For the principal supply projection we use the 2028 average retirement age of 65 for both genders (unchanged for men but three years higher for women from 2013), informed by our Delphi panel.

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### 7.3 Retirement modelling assumptions

The CfWI's baseline forecast suggests that about 460 O&G consultants may retire between 2015 and 2019 inclusive. A wave of earlier retirements would have only a modest impact on total workforce supply, as the system would lose only a year or two of service from each retiree.

The CfWI has, for this reason, used its standard net leavers methodology. This is calculated using actual NHS retirement rates over the past five years and the age profile of the O&G workforce. This works out at 3 to 4 per cent of the workforce retiring each year, on average.

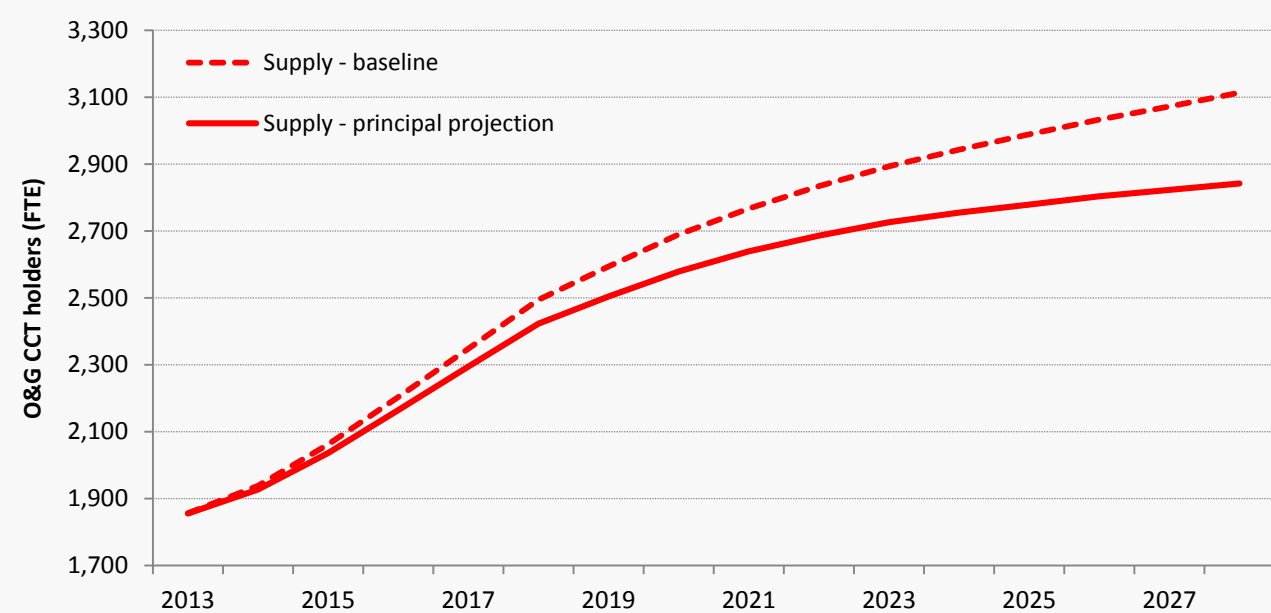
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### 7.4 Baseline and principal supply projections

Figure 7 shows the CfWI's baseline and principal supply projections for the O&G consultant workforce. Baseline supply indicates the level of supply in the future, should current trends in recruitment, training pathways, staff attrition and retirement remain the same. Figures are shown on a full-time equivalent (FTE) basis. Figure 7 shows that baseline supply is forecast to grow by 67 per cent to around 3,110 FTEs by 2028.

We have also produced a **workforce supply principal projection**. The principal projection is based on the assumptions described in 7.1 and 7.2 of this report. Our supply principal projection assumes the ST1 recruitment intake from 2014 onwards is held constant at 204 doctors per year, which was the average ST1 recruitment intake between 2007–08 and 2013–14. Figure 7 shows the CfWI's supply principal projection is forecast to grow to around 2,840 FTEs. This is an increase of around **53 per cent by 2028**, a compound annual growth rate of 3.5 per cent.

Figure 7: Workforce supply baseline and principal projections for O&G CCT holders, England



Source: CfWI system dynamics model of the O&G CCT holder workforce for England

This level of workforce increase is well above our Delphi panel’s expectation of a modest 7 per cent increase in the level of commissioned O&G consultant time by 2028. Should the number of additional consultant places commissioned be in line with this estimate, or with expected patient demand, there will be insufficient new consultant posts to absorb the projected supply of new O&G CCT holders. As we concluded in 2011, **there are strong indications the O&G medical specialty is facing significant CCT oversupply.**

## 8. Demand and supply

### 8.1 Demand and supply baseline projections

Our baseline demand projection forecasts a 3.5 per cent increase in patient demand for O&G CCT holders by 2028 from 2013 levels, to around 1,920 FTEs. This projection reflects demographic factors (population growth and changing age composition) and hospital episode activity levels. This would be an annual growth rate of 0.3 per cent.

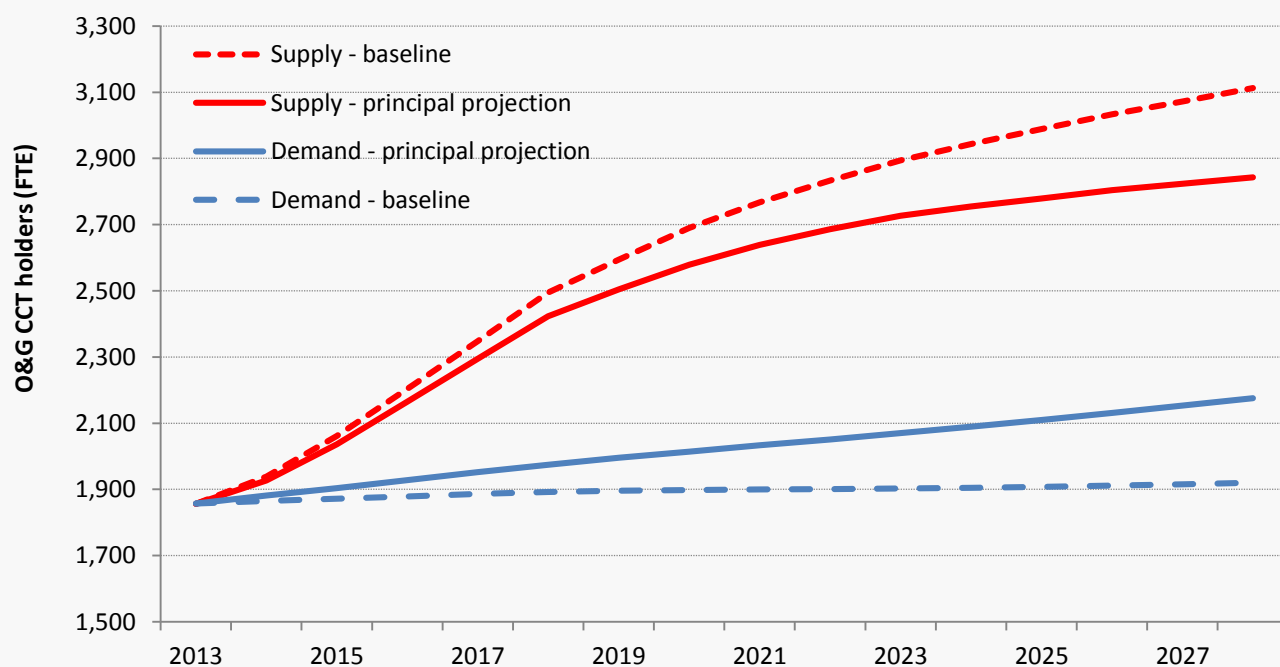
Our baseline supply projection forecasts a 67 per cent increase in the number of O&G CCT holders, to around 3,110 FTEs, by 2028. This would be an annual growth rate of 4.8 per cent.

Figure 8 shows baseline supply is markedly higher than baseline demand. This suggests there is a prospect that if the current trends in trainee numbers continue, O&G consultant workforce supply will outweigh future patient demand.

### 8.2 Demand and supply principal projections

The CfWI's principal projection is the combined demand principal projection and supply principal projection as explained above. Figure 9 shows both the baseline and principal projections for O&G CCT holders over the projection period to 2028.

Figure 8: Baseline and principal projections for O&G CCT holders, England



Source: CfWI system dynamics model of the O&G CCT holder workforce for England

The CfWI's demand principal projection shows demand rising to around 2,176 FTE in 2028, an increase of 17 per cent from 2013, as a product of a growing and ageing population, greater average individual patient need, and decreasing productivity. This is the workforce level that would enable current levels of O&G services per patient to be maintained.

The supply principal projection forecasts the total supply of CCT holders to increase to around 2,840 FTE in 2028, an increase of around 980 FTEs or a 53 per cent increase on 2013 levels. As Figure 8 shows, there will be sustained workforce growth across the entire projection period until 2028.

If current ST1 training intake is maintained at or around 204 ST1 posts per annum, workforce supply will exceed expected demand from 2014 onwards. By the end of the projection period, we anticipate a large oversupply of O&G CCT holders, with workforce supply exceeding expected patient demand by around 665 posts.

**The CfWI's assessment is if the ST1 intake is held constant at the current six-year average (about 204 doctors in training per year) there will be both CCT holder and workforce oversupply for the whole of the projection period to 2028, in particular from around 2018 onwards.**

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### 8.3 The potential impact of seven-day consultant-led care on demand

Our principal demand projection **does not** take into account potential reductions in the demand for O&G CCT holders should there be a reconfiguration of service delivery, for example through centralisation of maternity units or changes to the skill mix.

Nor does it incorporate the possible impact of the current drive towards consultant-led seven-day care. The Academy of Medical Royal Colleges (AoMRC) identified obstetrics as a specialty that should have a seven-day-a-week consultant presence (AoMRC, 2012). The RCOG (2012) has provided recommendations to move to seven-day consultant presence for obstetrics, building on previous guidelines (RCOG, 2005). **Please note:** NHS England is currently working to provide a detailed definition of consultant presence to determine if this means a consultant being available on site or a consultant who is on call and who can be on site within a short time frame.

Should the drive towards consultant-delivered care seven days a week be adopted, there will be an inevitable impact on the demand for consultants. Consultant obstetricians already work in multi-professional teams and therefore, seven-day consultant-led care would impact on support staff and services connected with providing obstetric care.

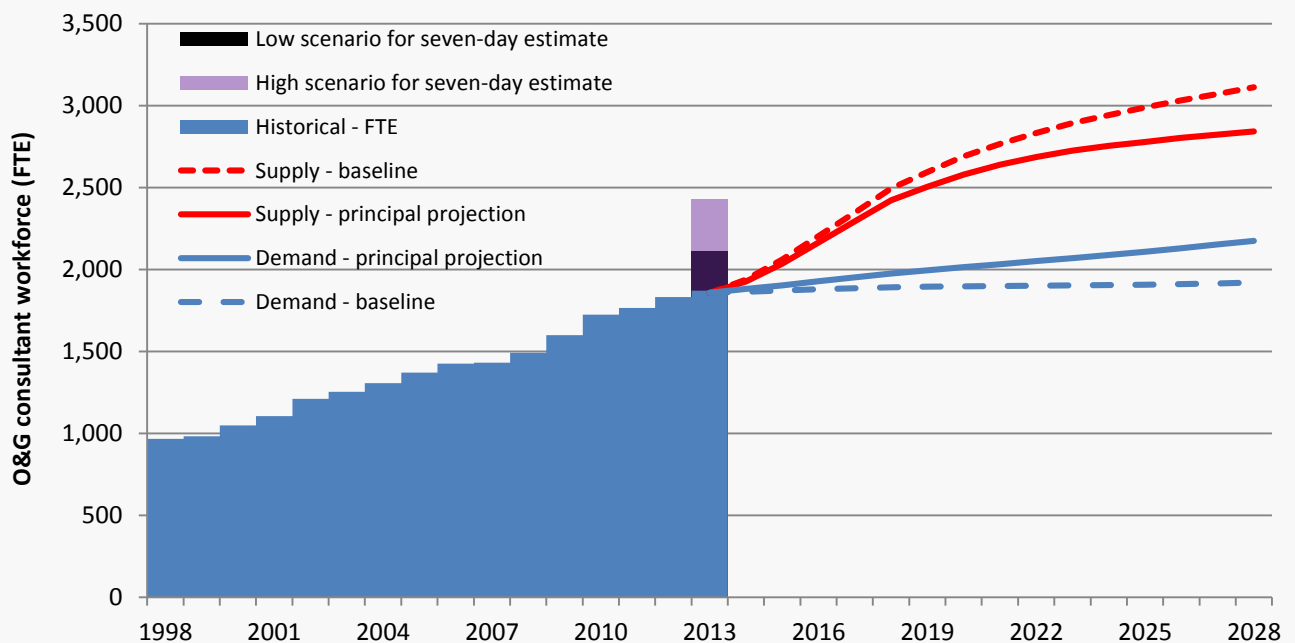
The NHS has not fully implemented those initial recommendations on minimum staffing by trained specialists, and there is no national plan for moving to consultant-delivered care seven days a week at the time of writing of this report. However, recognising the possibility of this happening within the timeframe of this report, the CfWI has made preliminary estimates modelling the potential impact on the demand for CCT holders of seven-day consultant-present care for obstetrics in England. Our estimates take into account the number of deliveries per consultant in labour wards across England and an assumption that the coverage is needed only for obstetricians.

The CfWI has made a range of assumptions around the possible configuration of services to deliver consultant-delivered care seven days a week (set out in detail in **Annex E**). These were made for the purpose of exploring the possible range in the increase in the number of CCT holders who may be required to deliver seven-day

consultant-present care; they are not intended to suggest any particular configuration of services. The method used in this modelling allows for the fact that consultant time is used differently in each trust.

The CfWI understands that work-life balance and thus job plans are crucial in implementing seven-day consultant-present care. The planning and implementation of consultant-delivered care seven days a week should consider configurations at a local level that would suit the obstetric staff delivering and managing that service.

**Figure 9: High and low scenarios for the implementation of seven-day O&G consultant-delivered care**



Source: CfWI system dynamics model of the O&G CCT holder workforce for England

This means the estimates provided here are for national coverage and do not seek to suggest specific estimations on a trust-by-trust level, although the calculation uses trust-level data. Please see **Annex E** for a detailed explanation of how we estimated the required number of obstetricians to provide seven-day care.

**Our estimates for consultant-delivered care seven days a week show that between 180 and 500 (FTE) additional CCT holders may be required to provide 168-hour coverage for obstetrics (see Figure 10).**

**Even if there is a drive towards the provision of seven-day consultant-delivered service in major labour wards in England, future workforce supply is still likely to significantly outstrip patient demand.**

Based on **our baseline demand and supply projection**, and the inclusion of consultant-delivered care seven days a week, there is a **risk of an oversupply of between 690 and 1,010 (FTE) O&G CCT holders**. Moreover, **based on the principal demand and supply projection**, and the inclusion of consultant-delivered care seven days a week, there is a **risk of an oversupply of between 160 and 480 (FTE) O&G CCT holders**.

## 9. Proposals and concluding remarks

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### 9.1 CfWI proposals and next steps

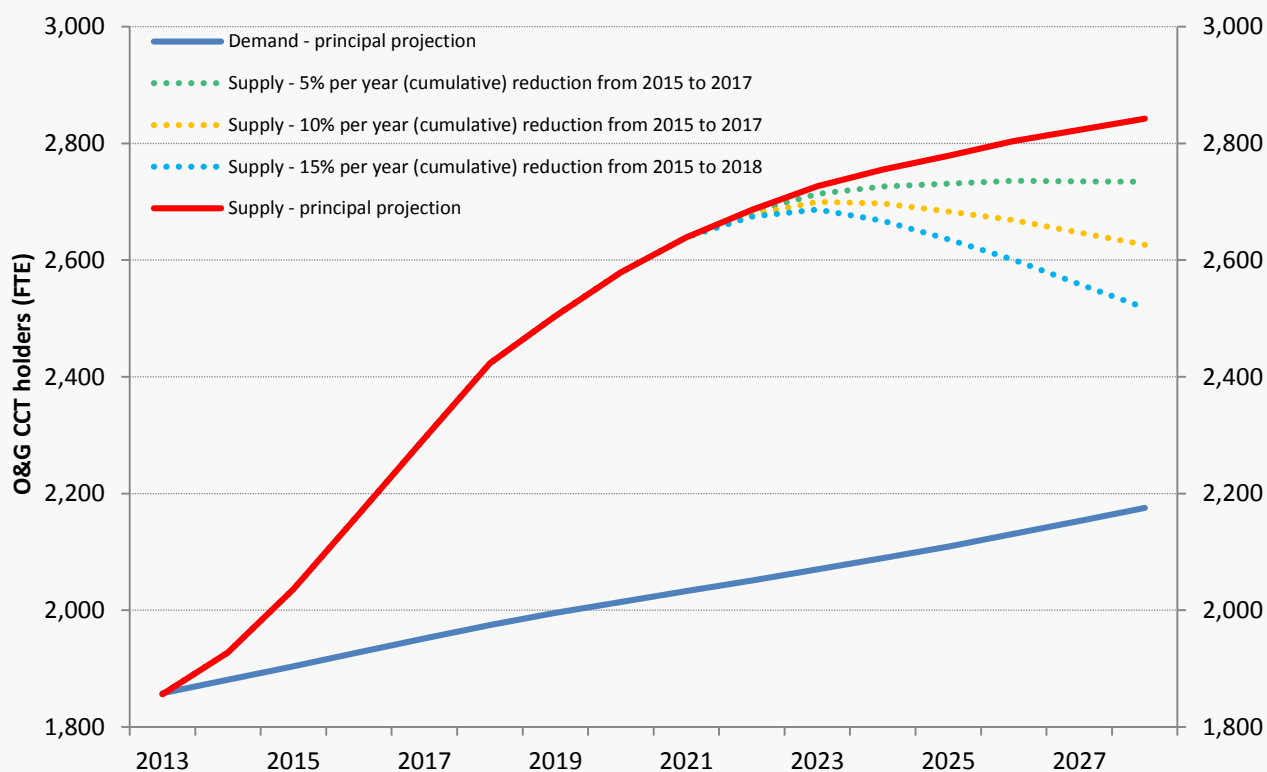
*The CfWI suggests that HEE consider an immediate, substantial, and sustained reduction in ST1 recruitment to reduce the level of CCT oversupply and to narrow the supply-demand gap over the longer term.*

The CfWI recognises that the specialty view is that without trainees, someone else will need to deliver the service element of these posts, and this is likely to be the consultants. With this in mind, we have modelled three illustrative options for reducing training commissioning for HEE to consider.

- **Illustrative option one is a sustained and cumulative 15 per cent reduction in ST1 intake:** a reduction in training intake by 5 per cent per annum, or about 30 fewer NTN posts in total, spread over the next three recruitment rounds (2015-16, 2016-17, and 2017-18). This would result in average yearly recruitment reducing from about 210 to 180 from 2017-18 onwards and would see a modest reduction in projected CCT holder supply to around 2,730 (FTE) by 2028 and an average number of doctors in training of about 1,200 (FTE). The 5 per cent per annum reduction in training numbers would only start impacting supply from around 2022 due to the current high number of doctors in training and the average training length being 7 to 10 years.
- **Illustrative option two is a sustained and cumulative 30 per cent reduction in ST1 intake:** a reduction in training intake by 10 per cent per annum, or about 60-65 fewer NTN posts in total, spread over the next three annual recruitment rounds (2015-16, 2016-17, and 2017-18). This would see average yearly recruitment reducing from about 210 to 150 from 2017-18 onwards, resulting in a projected workforce supply of around 2,620 (FTE) O&G CCT holders by 2028 and an average number of about 1,000 (FTE) doctors in training.
- **Illustrative option three is a sustained and cumulative 45 per cent reduction in ST1 intake:** a reduction in training intake by 15 per cent per annum, or about 95 fewer NTN posts in total, spread over the next three annual recruitment rounds (2015-16, 2016-17, and 2017-18). This would result in average yearly recruitment reducing from about 210 to 115 from 2017-18 onwards, and will see a supply of around 2,520 (FTE) CCT holders by 2028 and an average number of about 800 (FTE) doctors in training.



**Figure 10: Principal projection for O&G CCT holders and illustrative options for reducing training numbers, England**



Source: CfWI system dynamics model of the O&G CCT holder workforce for England

*The CfWI also proposes that a further workforce review be conducted before the end of 2017.*

It is important that a further review takes place before the end of 2017, as any changes to alter supply from 2022 onwards must be implemented in time for the 2018-19 annual recruitment round. We also suggest that the next review take a whole-team, multi-professional approach, looking at wider clinical professions.

Following discussions with stakeholders, the CfWI acknowledges that future uncertainties (such as changes to service commissions, seven-day consultant-delivered care, the impact of productivity, and the *Shape of Training* review) are difficult to estimate. A key consideration meriting further analysis in future is the potential impact of the introduction of seven-day services (including affordability, patient safety and outcomes) on the O&G workforce. However, even if there is a drive towards the provision of seven-day consultant-delivered service in major labour wards in England, future workforce supply is still likely to significantly outstrip patient demand.

Although uncertainty will always be present, it does not mean appropriate decisions should be deferred. Both the risk and likely magnitude of workforce oversupply has increased as no reduction in training posts has taken place to date. There are risks to any workforce planning recommendations, and it may be necessary for workforce planning to keep pace with changes in order to reduce the risk of oversupply of this specialty in the future.

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## 9.2 Concluding remarks

**Over the next 15 years, we project workforce supply in O&G to increase at more than double the rate of growth in patient demand, leading to CCT oversupply and a growing demand-supply gap. Without a sustained reduction in ST1 recruitment, the oversupply is likely to worsen.**

**Even if there is a concerted drive towards the provision of seven-day consultant-present care in major labour wards in England, future workforce supply is still likely to outstrip patient demand.**

Our illustrative options for reducing training numbers during the forecast period of oversupply all result in a total supply by 2028 of between 2,520 and 2,730 FTE O&G CCT holders. Each illustration presents a different way in which that level of supply could be achieved, while trying to balance any impact to service delivery with sustained control over the growing supply and the doctor-in-training-to-consultant ratio. Any reduction in training numbers at the next three recruitment rounds of about 5 per cent (15 per cent cumulative) or above would only impact the CCT holder workforce from around 2022.

Currently, it appears there are too many doctors in training for any reasonable projection of prospective consultant posts. Nationally there are 1,872 (FTE) consultants in post and in the next five years nearly 2,000 new CCT holders in O&G will qualify to be on the specialist register (HEE, 2013a, HSCIC, 2014). O&G is only one of three specialities (with a headcount of 20 or more) that has a trainee-to-consultant ratio greater than 0.9:1 (HEE, 2013a). All three illustrative options increase the trainee to consultant ratio from over 0.9:1 in 2014 to between 1:2 and 1:3 by 2028. At present, there is only a limited expansion in consultant posts and thus there is a risk that many CCT holders may fail to obtain a consultant post in the medium-to-long term.

Currently, O&G services depend significantly on doctors in training to deliver maternity services (RCOG, 2014c). However, there have been national developments, led by the North Western Deanery, for consultants to be appointed to deliver obstetric care out of hours while resident in the hospital, often without doctors in training above ST2 level (RCOG, 2014c). The Making it Better Together process launched by the Mid Yorkshire Hospitals NHS Trust has emphasised the need for consultant obstetrician-delivered care out of hours, which would also improve patient safety and quality of services (RCOG, 2014c).

The move towards obstetrician-delivered services could result in the expansion of consultant posts and career opportunities for doctors in training who will receive their CCT from around 2018 onwards. However, seven-day obstetrician cover may be difficult to achieve in the period of economic austerity that the NHS is facing. Furthermore, current NICE guidelines recommend a healthy woman whose pregnancy is classified as low risk should be encouraged to give birth in a midwife-led unit rather than a traditional labour ward (NICE, 2014).

The NHS is under pressure to make efficiency savings. Currently there is a lack of funding to deliver seven-day obstetrician-present care. Efficiencies could be achieved through productivity gains, service reconfiguration, and application of best practices. The period prior to the next suggested review in 2017 could be used for the development of additional strategies to enhance productivity gains and the evaluation of seven-day consultant-present obstetric services on efficiency, productivity, patient safety, and service quality.

## Annex A: People we have consulted during this project

The CfWI sought input from a wide range of health professionals as part of this project. The following individuals participated in one or more of the following: horizon scanning interviews, the Delphi panel exercise, data provision, or face-to-face consultative meetings. We would like to thank them for their time and contributions.

Name	Representing	Delphi panel
Dr Ted Adams	O&G consultants (inc. RCOG, SEAC and trainees)	●
Carmel Bagness	Nurses	●
Alexandra Birch	PHE/HEE/LETB/Employers	
Peter Blakeman	PHE/HEE/LETB/Employers	●
Joanne Bosanquet	PHE/HEE/LETB/Employers	
Dr Adrian Brooke	Educator	
Dr Catherine Calderwood	NHS England	
Dr Richard Cartmill	O&G consultants (inc. RCOG and SEAC)	
Dr Jean Chapple	O&G consultants (inc. RCOG and SEAC)	●
Maxine Chong	Midwives	●
Andy Cole	PHE/HEE/LETB/Employers	
Dr Ian Currie	O&G consultants (inc. RCOG and SEAC)	●
Dr Dina Dhorajiwala	O&G consultants (inc. RCOG and SEAC)	●
Maria Dore	Midwives	
Professor Simon Gregory	Educator	●
Dr Kate Guthrie	PHE/HEE/LETB/Employers	
Dr Diana Hamilton-Fairley	O&G consultants (inc. RCOG and SEAC)	
Jonathan Howes	PHE/HEE/LETB/Employers	●

Name	Representing	Delphi panel
Matthew Huggins	Workforce planner (RCOG)	●
Dr Joseph Iskaros	O&G consultants (inc. RCOG and SEAC)	●
Dr Karen Joash	O&G consultants (inc. RCOG and SEAC)	●
Dr Tracey Johnston	O&G consultants (inc. RCOG and SEAC)	●
Dr Hiu Lam	O&G consultants (inc. RCOG and SEAC)	●
Miss Hannah Knight	RCOG	
Eleni Kollia	PHE/HEE/LETB/Employers	
Gerda Loosemore	Service users	●
Dr Ed MacLaren	O&G consultants (inc. RCOG, SEAC and trainees)	
Dr Clare McKenzie	O&G consultants (inc. RCOG and SEAC)	●
Martin McColgan	RCPCH	
Patrick Mitchell	Commissioners	
Dr Ed Neale	O&G consultants (inc. RCOG and SEAC)	
Dr Jyothi Nippani	O&G consultants (inc. RCOG and SEAC)	●
Heather Parker	Nurses	●
Belinda Phipps	PHE/HEE/LETB/Employers	
Dr David Richmond	O&G consultants (inc. RCOG and SEAC)	●
Dr Daghni Rajasingam	O&G consultants (inc. RCOG and SEAC)	
Amanda Rolland	PHE/HEE/LETB/Employers	
Neil Savage	PHE/HEE/LETB/Employers	
Louise Silverton	Midwives	●
Dr Amu Sola	PHE/HEE/LETB/Employers	
Kate Soldan	PHE/HEE/LETB/Employers	
Professor David Sowden	CfWI professional advisors and board members	

Name	Representing	Delphi panel
John Stock	Commissioners	●
Dr Kevin Thomas	O&G consultants (inc. RCOG and SEAC)	
Dr Andrew Watson	Educator	
Dr Sarah Vause	PHE/HEE/LETB/Employers	
Jane Verity	Professional advisor, DH maternity policy	●

## Annex B: Horizon scanning drivers

**Overall, economic and political drivers were the most frequently mentioned by our horizon scanning participants, followed by technological and social drivers.**

‘Thinking ahead to 2028, what drivers (both trends and uncertainties) may influence (1) the requirements of the future O&G workforce and (2) workforce numbers and proportions?’

- By ‘driving forces’ we mean things in the profession’s contextual environment, not the internal workings of the profession that are within its direct control.
- By ‘requirements’ we mean roles, skills, demand and need for services.
- By ‘proportions’ we mean the shape of the workforce, proportions of different (sub)-specialties and grades, proportions relative to other disciplines.

Please consider possible technological, economic, environmental, political, social, and ethical drivers/influences and please tell us if you are aware of evidence that supports the driving forces you identify.

### Horizon scanning feedback: plausible drivers of demand and supply

#### Technological drivers:

- Change to surgical procedures
- Advances in reproductive, fetal and maternal medicine
- Change in the role of doctors
- Use of remote technology
- The use of automated technology in surgery
- Advances in the treatment of gynaecological cancers
- Advances in interventional radiology
- HPV and impact on disease
- Impact of genetic screening/profiling

#### Economic drivers:

- Extent of financial challenge
- Service reconfiguration
- Number and configuration of paediatric units
- Impact of expanding GP workforce
- Change to medical school applications due to cost of university education
- Cost of quality and training
- Access to appropriate facilities and equipment
- Flexibility within working life
- Impact of portfolio careers
- Opportunity for private practice

#### Environmental drivers:

- Maternal age at pregnancy
- Changes in the midwifery workforce
- Changing immigration and diversity in England
- Change in number of complex pregnancies

- The prevalence of substance misuse and the impact on services
- Female genital mutilation
- Physical skills of ageing workforce
- Number of available staff
- Disease burden

**Political drivers:**

- Proportion of services provided in the community
- Impact of seven-day working
- Choice in maternity services
- Ratio of NHS independent services
- Impact of Greenaway *Shape of Training* review
- Impact of measuring performance by outcomes
- Increased demand for evidence-based practice
- Consultants' role in O&G services
- Pension and retirement age
- Impact of European Working Time Directive (EWTD)

**Social drivers:**

- Changes in birth rate
- Skills impact of demand
- Attractiveness of part-time working
- Impact of more women in the workforce
- Impact of service user-led care
- Demand for community-based consultants
- Midwives, nurses and other healthcare professionals taking over some of the functions currently performed by doctors
- Impact of psychosexual health needs
- Impact of patient/family expectations
- Attitudes to prolonging life

**Ethical drivers:**

- Equal access to fertility treatment
- The impact of genetic screening
- Rationing of healthcare resources
- Availability of services
- Access to female genital cosmetic surgery
- Treatment of women in detention centres
- Uterine transplantation
- Impact of extreme prematurity
- Changing societal attitudes to end-of-life care, assisted dying and euthanasia

## Annex C: Delphi panel exercise

The Delphi panel for the O&G stocktake was not only limited to clinicians. The panel consisted of a wide range of professional representatives with specialist perspectives on the O&G workforce, including service commissioners, providers/employers, educators, O&G consultants, midwives, doctors in training, HEE, the profession and the O&G Specialty Educational Advisory Committee (SEAC). HEE signed off both the panel and questions.

The final median judgments of the panel after two rounds were fed into the CfWI model to inform our projection of expected demand and supply.

### Delphi participant overview

Table 3: Delphi participant overview

	Confirmed participants		Round 1			Round 2			% of R1 participants
			Number	% of total responses	% of total confirmed participants	Number	% of total responses	% of confirmed participants	
O&G consultants (inc. RCOG, SEAC & trainees)	16	47%	11	50%	32%	11	50%	69%	100%
Commissioners	3	9%	1	4%	3.0%	1	5%	25%	100%
HEE/LETB/Employers	4	12%	1	5%	3.0%	1	5%	25%	100%
Nurses	2	6%	2	9%	6.0%	2	9%	100%	100%
Midwives	2	6%	2	9%	6.0%	2	9%	100%	100%
Professional advisors	2	6%	2	9%	6.0%	2	9%	100%	100%
Medical educators	3	9%	1	4%	3.0%	1	5%	33%	100%
Service users	1	3%	1	5%	3.0%	1	5%	100%	100%
Workforce planners	1	3%	1	5%	3.0%	1	5%	100%	100%
<b>Total</b>	<b>34</b>	<b>100%</b>	<b>22</b>	<b>100%</b>	<b>65%</b>	<b>22</b>	<b>100%</b>	<b>65%</b>	<b>100%</b>

Source: CfWI analysis of Delphi results

- A wide range of specialists contributed: the quantity and quality of contributions was high.
- A total of 22 out of 34 (67 per cent) confirmed participants took part in both Delphi stages.
- O&G consultants (including RCOG, SAC and trainee representatives) contributed the largest proportion of responses.
- There was some convergence of answers in round two, but some questions still elicited a wide range of quantitative answers.



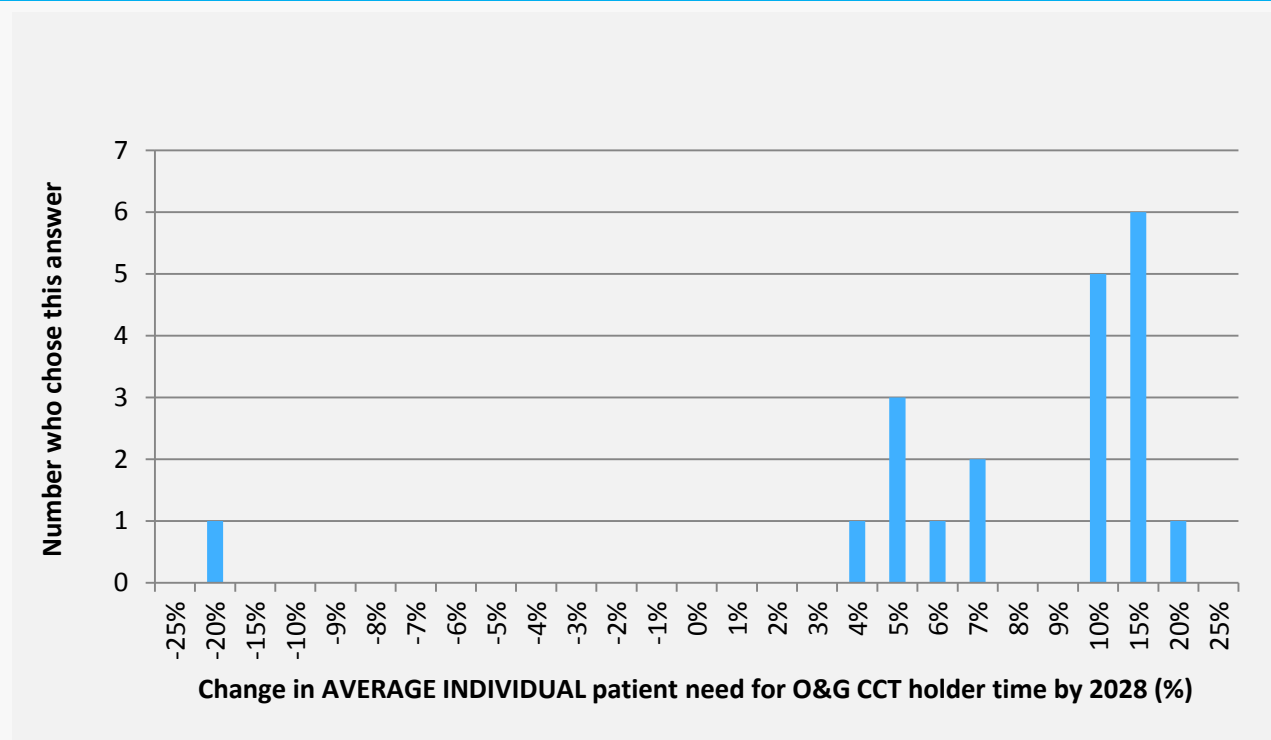
## Delphi questions and responses

### Average individual patient need question

**Question: By 2028 how will individual patient need for O&G CCT holder time change, on average, relative to today?**

By 'need' we mean: 'the requirement of individuals to enable them to achieve, maintain or restore an acceptable level of social independence or quality of life as defined by a particular care agency or authority'.

**Figure 11: Average individual patient need**



**Source:** CfWI analysis of Delphi results

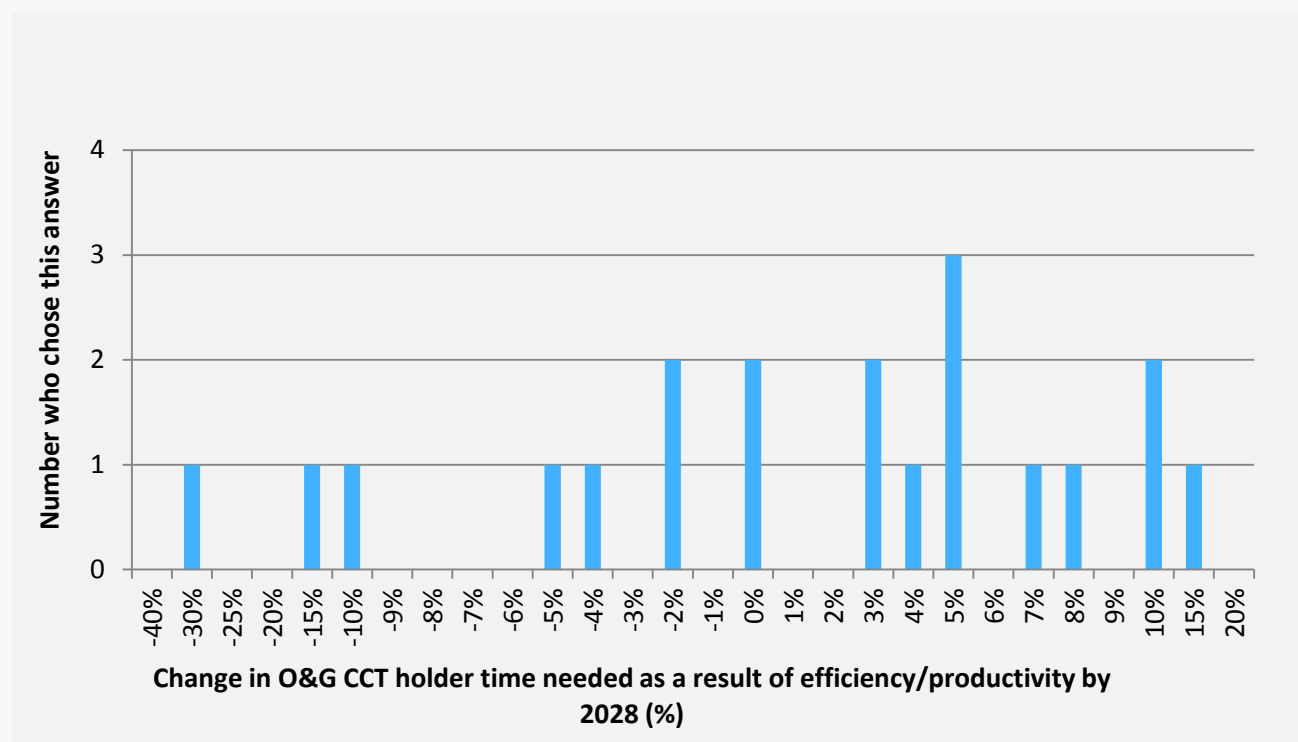
The final judgments of the panel after two Delphi rounds:

- The most common answer was 15 per cent
- The answers ranged from -20 to 20 per cent.
- 50 per cent of the answers were between 6 and 15 per cent.
- The median value was 10 per cent.
- The mean value was 9 per cent.
- The panel was instructed not to consider population growth as it is factored separately into the model. However, some rationales included population, which has the potential of overestimating or double counting the impact of population growth/ageing population.
- There was a convergence of range in round two, with the median value unchanged.

### Efficiency and productivity question

**Question: By 2028, as a result of workforce efficiency and productivity, will more or less O&G CCT holder time be needed to meet the same amount of patient need, relative to today?**

Figure 12: Efficiency and productivity



Source: CfWI analysis of Delphi results

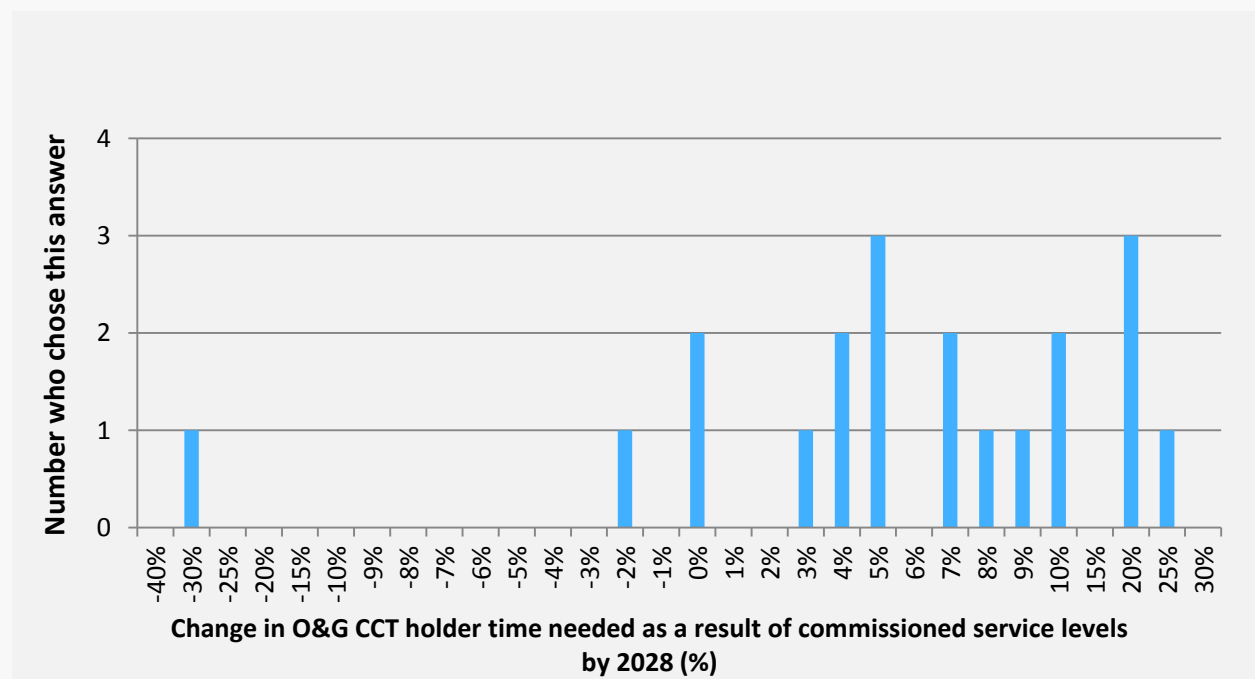
The final judgments of the panel after two Delphi rounds:

- The most common answer was 5 per cent.
- The answers ranged from -30 to 15 per cent.
- 50 per cent of the answers were between -3 and 6 per cent.
- The median value was 3 per cent.
- The mean value was 0 per cent.
- Some participants' quantitative answers appeared to contradict their rationales. We contacted those people individually and, with their agreement, adjusted their answers to match their intentions.
- There was a convergence of range in round two, with the median value lower by 2 per cent.

### Commissioned level of service question

Question: by 2028, how much CCT holder time will be commissioned for obstetrics and gynaecology services, relative to today?

Figure 13: Commissioned level of service



Source: CfWI analysis of Delphi results

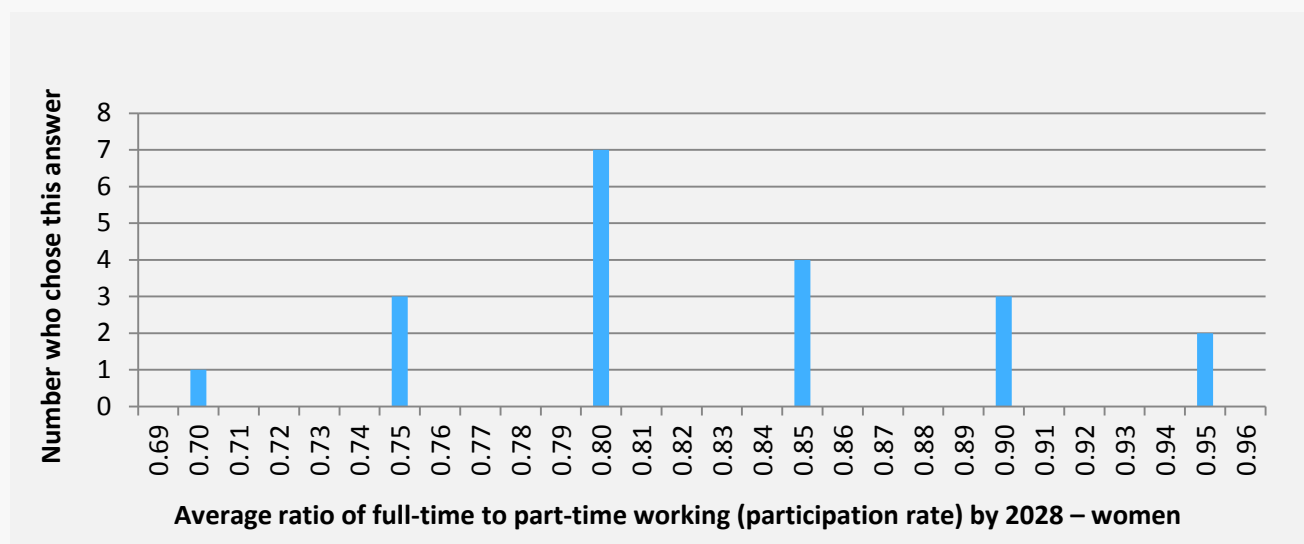
The final judgments of the panel after two Delphi rounds:

- The most common answers were 5 and 20 per cent.
- The answers ranged from -30 to 25 per cent.
- 50 per cent of the answers were between 4 and 10 per cent.
- The median value was 6 per cent.
- The mean value was 7 per cent.
- Some participants' quantitative answers appeared to contradict their rationales. We contacted those people individually and, with their agreement, adjusted their answers to match their intentions.
- There was a convergence of range in round two, with the median value higher by 1 per cent.

Participation rate question – women

Question: What do you think will be the AVERAGE RATIO OF FULL-TIME TO PART-TIME WORKING (PARTICIPATION RATE) of O&G CCT holders in 2028, by gender?

Figure 14: Participation rate – women



Source: CfWI analysis of Delphi results

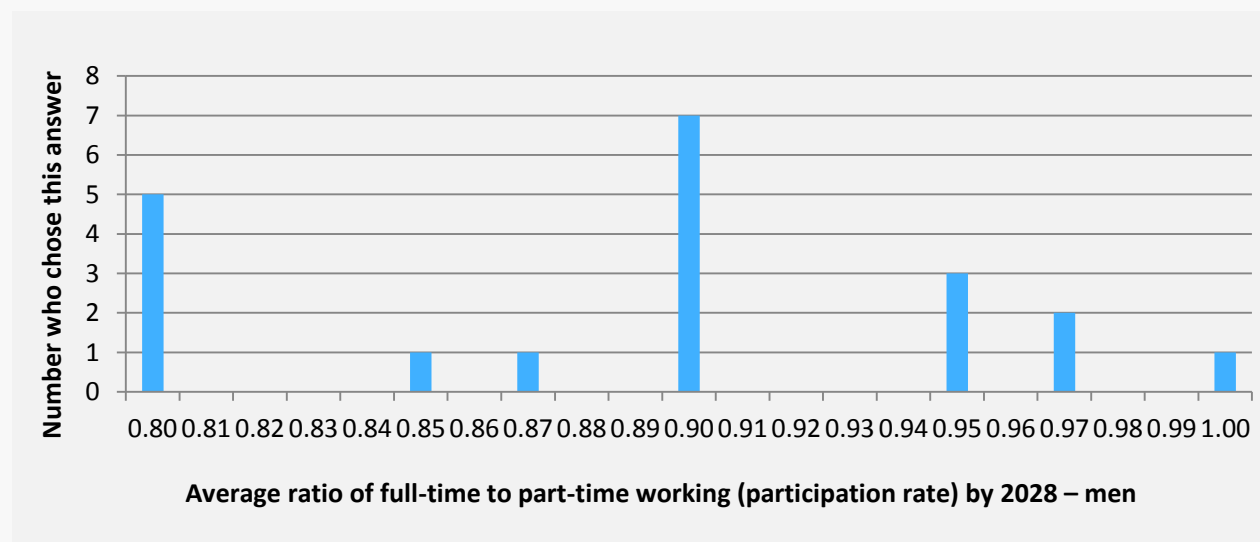
The final judgments of the panel after two Delphi rounds were as follows.

- The most common answer was 0.80.
- The answers ranged from 0.70 to 0.95.
- 50 per cent of the answers were between 0.80 and 0.86.
- The median value was 0.80.
- The mean value was 0.83.
- Some participants' quantitative answers appeared to contradict their rationales. We contacted those people individually and, with their agreement, adjusted their answers to match their intentions.
- There was a convergence of range in round two, with the median value unchanged.

Participation rate question – men

Question: What do you think will be the AVERAGE RATIO OF FULL-TIME TO PART-TIME WORKING (PARTICIPATION RATE) of O&G CCT holders in 2028, by gender?

Figure 15: Participation rate – men



Source: CfWI analysis of Delphi results

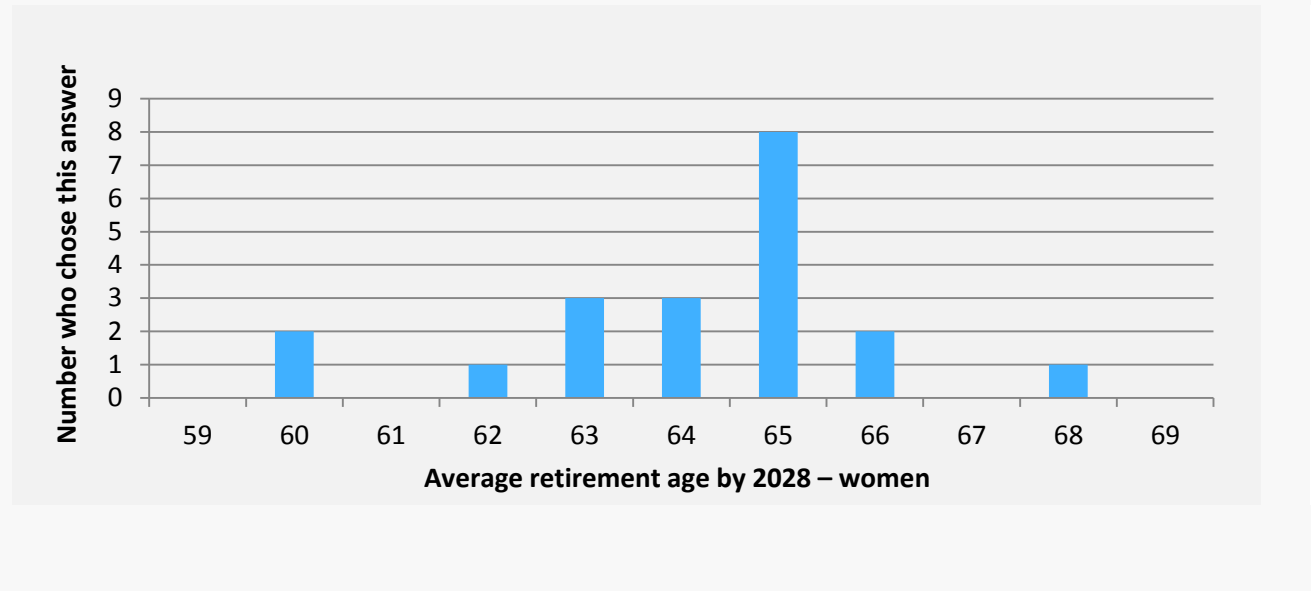
The final judgments of the panel after two Delphi rounds were as follows.

- The most common answers were 0.90 and 0.80.
- The answers ranged from 0.80 to 1.00.
- 50 per cent of the answers were between 0.84 and 0.95.
- The median value was 0.90.
- The mean value was 0.89.
- Some participants' quantitative answers appeared to contradict their rationales. We contacted those people individually and, with their agreement, adjusted their answers to match their intentions.
- There was a convergence of range in round two, with the median value unchanged.

Retirement age question – women

Question: What do you think will be the AVERAGE RETIREMENT AGE of O&G CCT holders, by gender, by 2028?

Figure 16: Retirement age – women



Source: CfWI analysis of Delphi results

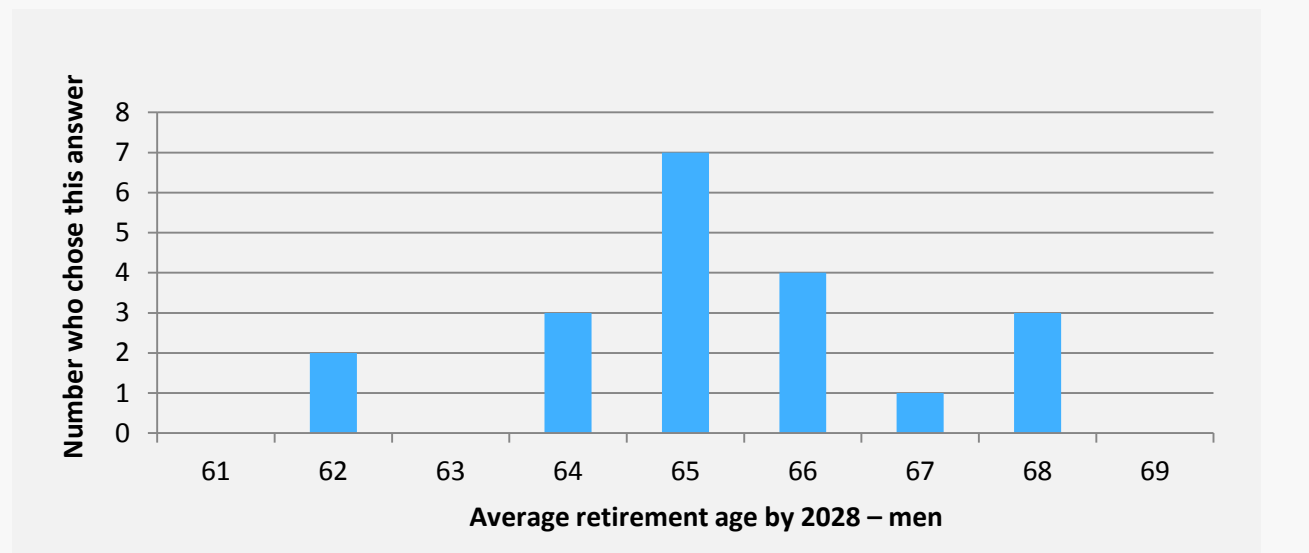
The final judgments of the panel after two Delphi rounds were as follows.

- The most common answer was 65.
- The answers ranged from 60 to 68.
- 50 per cent of the answers were between 63 and 65.
- The median value was 65.
- The mean value was 64.
- There was a convergence of range in round two, with the median value higher by 2.

Retirement age question – men

Question: What do you think will be the AVERAGE RETIREMENT AGE of O&G CCT holders, by gender, by 2028?

Figure 17: Retirement age – men



Source: CfWI analysis of Delphi results

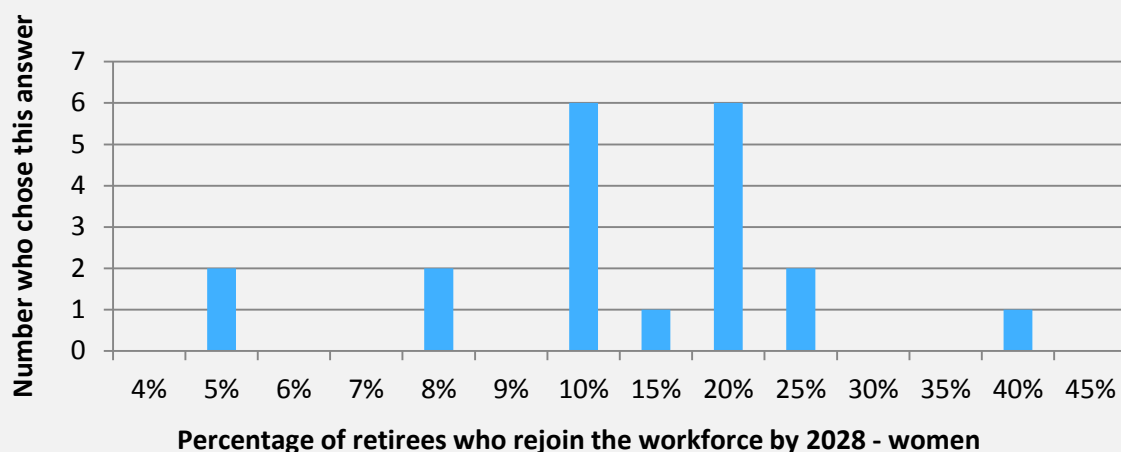
The final judgments of the panel after two Delphi rounds were as follows.

- The most common answer was 65.
- The answers ranged from 62 to 68.
- 50 per cent of the answers were between 64.8 and 66.
- The median value was 65.
- The mean value was 65.
- There was a convergence of range in round two, with the median value unchanged.

### Retire and rejoin question

**Question: What do you think will be the percentage of retirees who will REJOIN the workforce SHORTLY AFTER RETIRING, by 2028, by gender?**

**Figure 18: Retire and rejoin – women**



**Source:** CfWI analysis of Delphi results

The final judgments of the panel after two Delphi rounds were as follows.

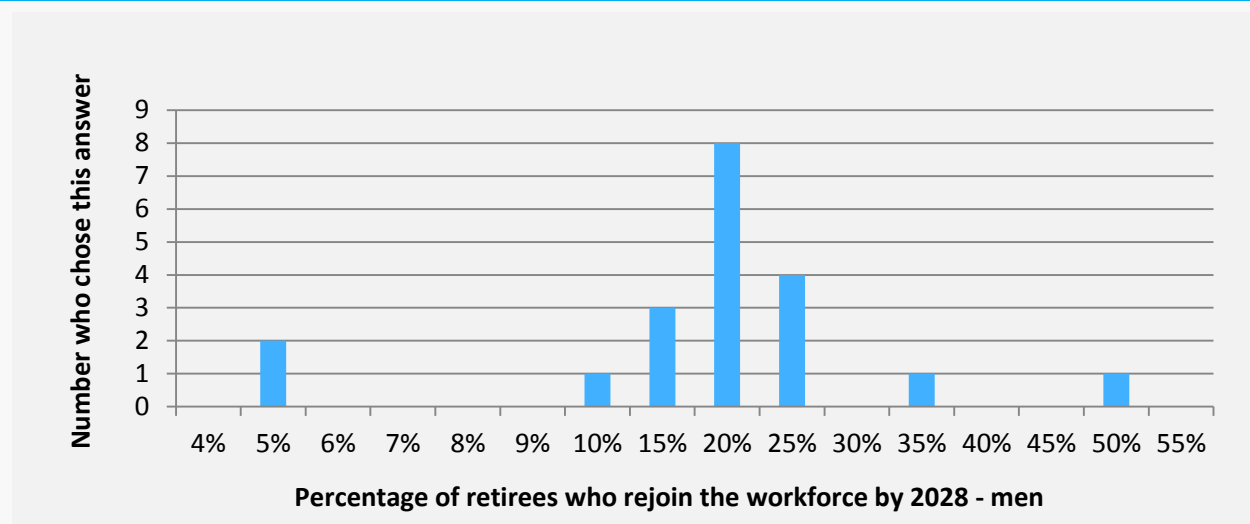
- The most common answers were 10 and 20 per cent.
- The answers ranged from 5 to 40 per cent.
- 50 per cent of the answers were between 10 and 20 per cent.
- The median value was 13 per cent.
- The mean value was 16 per cent.
- There was a convergence of range in round two, with the median value lower by 7 per cent.



### Retire and rejoin question

**Question: What do you think will be the percentage of retirees who will REJOIN the workforce SHORTLY AFTER RETIRING, by 2028, by gender?**

Figure 19: Retire and rejoin – men



Source: CfWI analysis of Delphi results

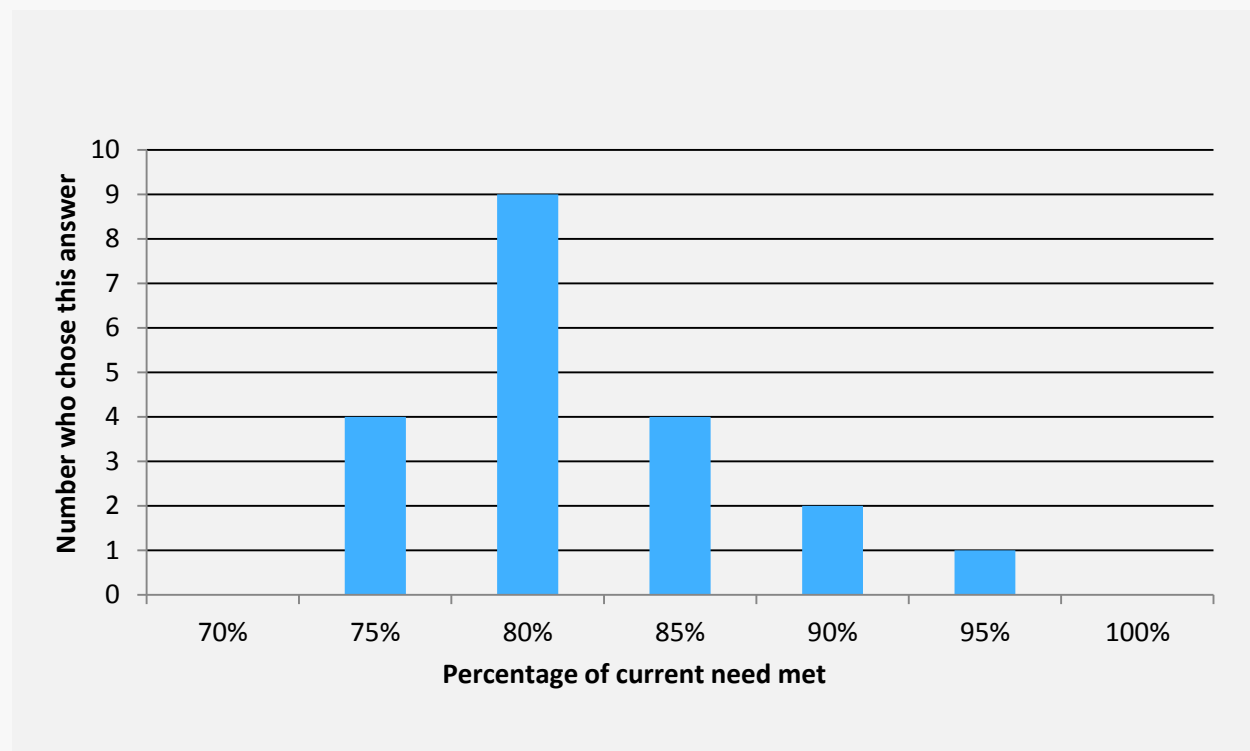
The final judgments of the panel after two Delphi rounds were as follows.

- The most common answer was 20 per cent.
- The answers ranged from 5 to 50 per cent.
- 50 per cent of the answers were between 15 and 25 per cent.
- The median value was 20 per cent.
- The mean value was 21 per cent.
- There was a convergence of range in round two, with the median value unchanged.

Current need question

Question: What percentage of today's need is met by today's O&G service provision?

Figure 20: Current level of met need



Source: CfWI analysis of Delphi results

The final judgments of the panel after two Delphi rounds are listed below.

- The most common answer was 80 per cent.
- The answers ranged from 75 to 95 per cent.
- 50 per cent of the answers were between 80 and 85 per cent.
- The median value was 80 per cent.
- The mean value was 82 per cent.
- There was a convergence of range in round two, with the median value unchanged.

## Annex D: Birth rate, changing population and demographics

Prevalence rates by age group for inpatients and outpatients for 2013 were calculated using HES data. The CfWI assumed rates remain constant, and factored ONS population forecasts by age group from 2013 to 2028, creating a prevalence-rate-weighted time series forecast of future demand based on population growth by age group.

For O&G, the resulting overall change in demand by 2028 is estimated to be 4.1 per cent higher with inpatient data, and 5.6 per cent higher with outpatient data. The numbers of outpatients compared to inpatients are higher. However, when combined as a weighted population total, the resulting increase in demand is estimated at 3.5 per cent by 2028.

### Changing population 2013 to 2028, England

There are large variations by age group, with the total population forecast to grow by 3.4 per cent:

- 75+ year-old age group forecast to grow by 56 per cent
- 60- to 74-year-old age group forecast to grow by 25 per cent
- 60+ year-old age group forecast to grow by 36 per cent
- 15- to 59-year-old age group forecast to increase by 2 per cent
- 0- to 14-year-old age group forecast to increase by 10 per cent.

**Table 4: Changing population 2013 to 2028, England**

	Age in population (thousands)			
	0-14	15-59	60-74	75+
2013	9,485	31,940	7,857	4,212
2028	10,453	32,634	9,784	6,589
2013 to 2028 change	<b>10.2%</b>	<b>2.2%</b>	<b>24.5%</b>	<b>56.4%</b>
			<b>35.7%</b>	

Source: ONS (2013)

## Estimated 2028 O&G inpatients based on 2013 prevalence rates

2013 inpatient data is only available in the four age bands shown.

\*ONS forecasts

\*\*Based on 2013 prevalence rates

**Table 5: Estimated 2028 O&G inpatients based on 2013 HES prevalence rates**

	Inpatients				
Age	0-14	15-59	60-74	75+	Total
2013 O&G inpatients	53,625	1,634,901	61,357	29,392	1,779,275
2013 population (thousands)	9,485	31,940	7,857	4,212	
2013 rate/population (thousands)	5.7	51.2	7.8	7.0	
2028 population (thousands)*	10,453	32,634	9,784	6,589	
2028 O&G inpatients**	59,100	1,670,434	76,400	45,976	1,851,910
	<b>Overall change in demand by 2028</b>				<b>4.10%</b>

Source: HSCIC (2013c, 2013d), ONS (2013)

## Estimated 2028 O&G outpatients based on 2013 prevalence rates

2013 outpatient data is available in the 10 age bands shown.

\*ONS forecasts

\*\*Based on 2013 prevalence rates

**Table 6: Estimated 2028 O&G outpatients based on 2013 HES prevalence rates**

Age	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
2013 O&G outpatients	10,184	254,153	2,054,884	2,271,150	723,602	316,281	231,244	160,358	81,037	11,156	6,114,049
2013 population (thousands)	6,477	6,294	7,281	7,031	7,764	6,577	5,805	3,757	2,070	438	
2013 rate/population (thousands)	1.6	40.4	282.2	323.0	93.2	48.1	39.8	42.7	39.2	25.5	
2028 population (thousands)*	6,935	7,032	7,006	7,783	7,389	6,941	7,050	5,136	3,284	903	
2028 O&G outpatients**	10,904	283,964	1,977,354	2,514,368	688,596	333,764	280,828	219,235	128,590	22,984	6,460,586
	<b>Overall change in demand by 2028</b>										<b>5.7%</b>

Source: HSCIC (2013c, 2013d), ONS (2013)

# Annex E: Scenarios for the drive towards consultant-delivered care seven days a week

## E1: Introduction

The AoMRC and RCOG recommend a drive towards consultant-delivered care seven days a week for obstetrics (AoMRC, 2012, RCOG, 2005, RCOG, 2012). The recommendation has not been implemented yet, with only some trusts currently trying to achieve rotas that can meet seven-day consultant-present care.

The adoption of seven-day consultant-led care will have a significant impact on the demand for consultants. Additionally, consultant obstetricians work in multi-professional teams and therefore, seven-day consultant-led care would have an impact on all support staff and services connected with providing obstetric care.

In recognition of the drive towards consultant-delivered care seven days a week, the CfWI has provided preliminary modelling to explore the potential impact on the demand for O&G CCT holders. This annex presents the assumptions, method, and results that the CfWI used to estimate the required number of CCT holders to deliver consultant-delivered obstetric care seven days a week in England.

Table 7 shows real data from four trusts demonstrating the wide variation in the number of consultants per total deliveries. Trusts A and B both have almost the same number of consultants employed. However, Trust B provides a greater number of deliveries. The number of consultant-presence hours is significantly higher for the trust with the higher activity level, despite having almost the same number of consultants. **Please note:** NHS England is currently working to provide a detailed definition of consultant presence to determine if this means a consultant being available on site or a consultant who is on call and who can be on site within a short time frame.

There may be a number of reasons for this, which may include: one trust providing highly specialised services while the other does not; one having a greater number of doctors in training; one labour ward (LW) having a different degree of skill mix in its configuration; or one having a different proportion of gynaecological services provided. A similar picture is seen for Trusts C and D, which have smaller LWs and (despite the identical number of consultants and number of deliveries) have very different levels of consultant coverage. The job plans for the consultants in these four trusts may be very different. This annex will also explain how the CfWI calculated the number of additional consultants required for all LWs in England.

**Table 7: Example of variation in service-delivery consultant-presence hours**

Organisation	Total deliveries in 2012	Consultants in posts	Consultant hours present on labour ward
Trust A	6,600	29	70
Trust B	8,150	30	106
Trust C	1,400	4	98
Trust D	1,400	4	40

**Source:** RCOG census (2012 figures, unpublished)

### E2: Setting up the basis of the calculation

Seven-day consultant care should consider a number of factors, including the number of staff needed to cover rotas out of hours and the quantity (activity) of work the staff will need to deliver. This means that depending on the amount of activity, trusts may have varying requirements for the number of consultants delivering the service. Babies can be born at any time of day or night. However, most of the elective or planned services occur during the day. This means that while during the day a particular shift may require several consultants to meet the required amount of service, during a night shift it is possible that the requirement for the number of consultants is lower.

The additional time for seven-day consultant care is the same across all LWs. However, the amount of activities may vary across LWs. The range of activity across LWs in England, using the number of deliveries in a year as a metric, is between the low hundreds, with only three to four consultants employed, and over 9,000 deliveries with about 30 consultants employed. It is important to note that it may not be feasible for smaller LWs to deliver seven-day consultant-led care.

### E3: Core Assumptions

In the absence of a national plan for seven-day consultant-present care, the CfWI made several modelling assumptions:

1. The modelling uses the activity levels of 2012 as the baseline data and calculates the additional number of CCT holders that would be required to deliver the same level of activity as in 2012 if the service was delivered seven days a week.
2. Only obstetric services require seven-day consultant-led care, and as a result the increase in CCT holder cover during the night (when no gynaecology services will occur beyond emergencies) will be focussed on obstetrics. Therefore, the calculations made here will be moderated on the estimated amount of activity spent on gynaecological services on average when related to the workload during the night.

3. The estimate is based on the number of deliveries per consultant in LWs across England [data is from 2012 RCOG survey] and it is assumed that this is a good proxy for clinical time spent in obstetrics by O&G consultants.
4. Between 43 and 76 per cent of all deliveries are performed by a consultant completely or in part. (Person conducting delivery (43 per cent) vs place of delivery (76 per cent)). This assumption forms the basis of the high and low bounds of the calculation and will be explained later.
5. These deliveries are spread evenly over seven days.
6. 100 per cent of planned procedures are undertaken during Monday to Friday and during daytime (or current scheduled 'fully-staffed' times of individual LWs).
7. A proportion of the 43 to 76 per cent of deliveries is provided during times defined as consultant present by each individual LW.
8. It is likely that emergencies will occur at any time during seven-day care.
9. 19 per cent of O&G consultants practise gynaecology only, 11 per cent practise only obstetrics, and 67 per cent practise both (RCOG, 2014c).
10. All LWs provide seven-day consultant-led care.

The CfWI does not make any assumptions about job plans, as the variations around them are significant and should be agreed at the local level on a case-by-case basis and by individual trusts. This analysis also does not attempt to explore the level of support staff that may be required for seven-day consultant-led care.

#### E4: Method

This calculation relies on the above assumptions as well as data from HES and RCOG's latest unpublished census of labour wards (2012 data). The steps in the calculation are as follows.

- A. Estimate the proportion of deliveries performed in part or completely by CCT holders.
- B. Estimate the proportion of deliveries performed by CCT holders outside of 2012 reported CCT holder presence for each individual LW.
- C. Estimate the number of CCT holders required to perform the estimated proportion of deliveries for each individual LW.
- D. Include correction to exclude gynaecology services from seven-day care, i.e. estimate the number of CCT holders required for obstetric services only.
- E. Acknowledge that there is no data showing the actual split of activity based on time spent on obstetric vs gynaecological services, and set a plausible range.
- F. Conduct a final range of estimates.

Each step is explained in detail in the following section.

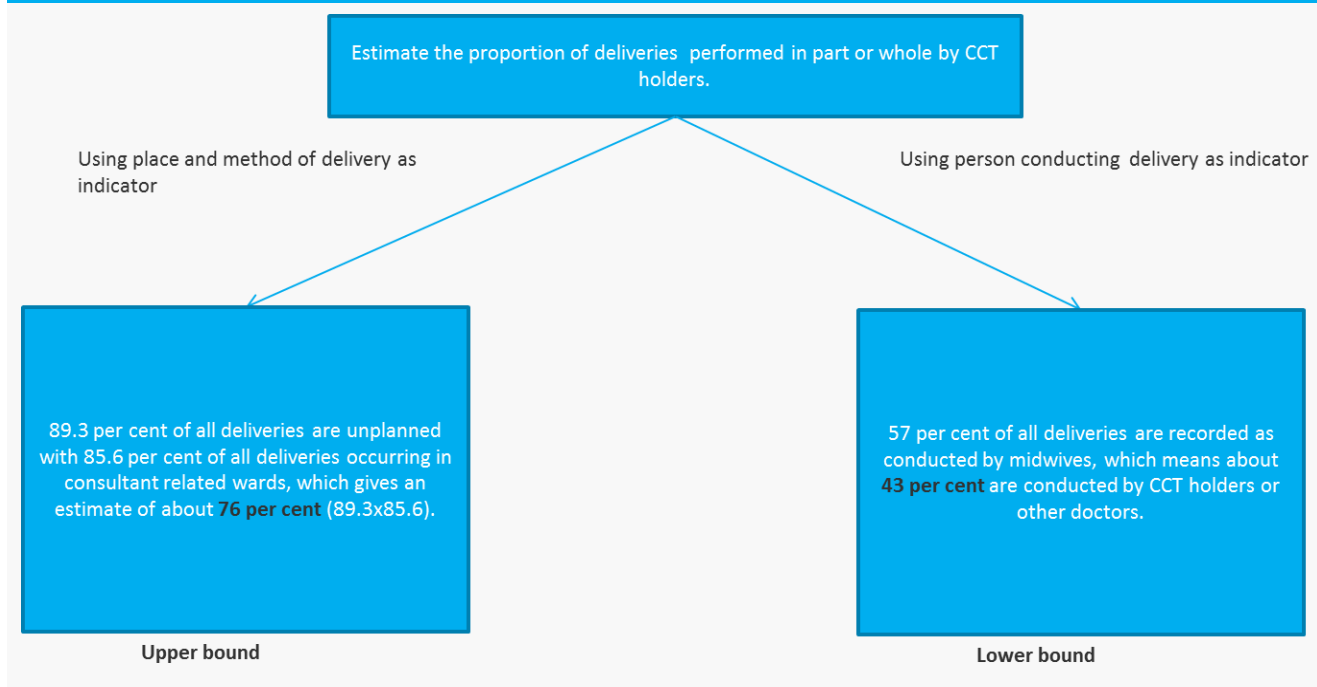
#### ***A. Estimate the proportion of deliveries performed in part or completely by CCT holders.***

Figure 22 summarises the upper and lower bounds for the estimate of the proportion of deliveries performed in part or completely by CCT holders in England.

Babies in the NHS are delivered by midwives, GPs, and hospital doctors or consultants. Since we are using the number of deliveries as a proxy for clinical time spent in obstetrics by O&G consultants it is important to know what proportion of all deliveries are performed in part or completely by an O&G consultant. This will effectively exclude deliveries performed exclusively by midwives or other professionals. Once this proportion is established it can be used to estimate the proportion of deliveries consultants in each LW have been involved in.

According to HES, in 2012–13, 89.3 per cent of all deliveries were unplanned, if only elective caesareans were considered as planned (HSCIC, 2013d). Elective care is excluded from this proportion because it was assumed that planned procedures are already carried out during consultant presence. Additionally, 85.6 per cent of all deliveries occurred in consultant-related wards (HSCIC, 2013b). This means 76 per cent (89.3 per cent of the 85.6 per cent) of deliveries were unplanned **and** occurred in consultant-related wards.

**Figure 21: Step 1 of the modelling method**



**Source:** HSCIC (2013b)

Although HES records the place and method of delivery, place and method of delivery alone are insufficient, as midwives also deliver babies in hospitals. Midwives are recorded as part of the consultant/midwife/GP ward group. Due to the existence of midwifery units in LWs, it is likely that the proportion of all deliveries which are unplanned and occur in consultant-related wards is an overestimate of the proportion of deliveries performed by consultants. Therefore, this forms an upper bound, U, of the estimate of the proportion of deliveries performed in part or in whole by CCT holders in England.

According to HES, in 2012-13, 43 per cent of all deliveries were conducted by consultants or ‘other’. Although HES records the person conducting the delivery, these recorded figures may not be accurate, as some deliveries may require an intervention from a consultant, and such interventions are not recorded. It is therefore likely that this figure is an underestimate of the proportion of deliveries which involve a consultant.



As such, it forms the lower bound, L, of the estimate of the proportion of deliveries performed in part or completely by obstetricians in England.

*The proportion of unplanned deliveries involving a CCT holder is expected to be between 43 and 76 per cent.*

**B. Estimate the proportion of deliveries performed by CCT holders outside of the 2012 reported CCT holder presence for each individual LW.**

In the RCOG 2012 census of LWs, each LW reported the number of employed consultants, the number of deliveries, and the number of hours of consultant presence. It is important to understand the proportion of deliveries performed during those consultant-present hours, as the proportion outside of that time will require additional consultants to provide consultant presence.

To calculate this proportion, the number of deliveries (d) performed outside of consultant-presence hours for each LW is required. This calculation requires the following numbers for each trust:

- i. the total number of deliveries by each trust, n
- ii. the number of hours recorded as consultant presence for each trust, p
- iii. the number of hours of consultant presence required per week, in this case 168 hours for seven days.

*The number of deliveries, d performed outside of consultant-presence hours for each LW is*  
$$d = n * (168-p)/168$$

The letter 'd' in the calculation is the number of deliveries performed outside of consultant-presence hours by trust. However, as shown in part A, only a portion of those deliveries are unplanned and involve a consultant. This means we have a range in the number of deliveries performed by CCT holders outside of the 2012 reported CCT holder presence for each individual LW.

*The number of deliveries performed by CCT holders outside of the 2012 reported CCT holder presence for each individual LW is between the upper bound, U, of 76 per cent \* d and the lower bound, L, of 43 per cent \* d.*

Therefore:

*the proportion of deliveries performed by CCT holders outside of the 2012 reported CCT holder presence for each individual LW is between U/n and L/n.*

**C. Estimate the number of CCT holders required to perform the estimated proportion of deliveries for each individual LW.**

Once the proportion of deliveries performed by CCT holders outside of the 2012 reported CCT holder presence for each individual LW is known, the number of CCT holders required to be present to deliver that quantity of activity is calculated.

This calculation requires the following numbers for each trust:

- iv. the number of consultants employed by each trust (LW), c

*the number of CCT holders required to perform the estimated proportion of deliveries for each individual LW is between  $c*U/n$  and  $c*L/n$ .*

**D. Include correction to exclude gynaecology services from seven-day consultant-present care, i.e. estimate the number of CCT holders required for obstetric services only.**

The calculation up to this point has considered all O&G consultants to be providing obstetric services only. However, that is not the case. We stated the assumption that 19 per cent of O&G consultants practise gynaecology only, 11 per cent practise only obstetrics and 67 per cent practise both. This means that we must correct the estimate to account for any service that pertains to gynaecology only, with the exception of emergency care, as only obstetric services are assumed to be seven-day care.

19 per cent of consultants practise gynaecology only and they do not contribute to the activity pertaining to deliveries. This means that the number of consultants required to carry out the number of deliveries in each LW will be proportionally less than recorded as employed by each trust. Additionally, a fraction of the activity provided by the 67 per cent who practise both O&G will be related to gynaecology and thus will result in a lower proportion of consultant time actually spent on deliveries.

To account for the non-obstetric level of activity, the estimate needs to be moderated by the suggested proportions of those who provide obstetric vs gynaecological services.

*The number of CCT holders required for obstetric services for each individual LW is between  $(c*U/n)*0.11+(c*U/n)*0.67$  and  $(c*L/n)*0.11+(c*L/n)*0.67$ .*

It is unclear what proportion of the activity performed by consultants practising both obstetrics and gynaecology is obstetrics related. However, according to HES, 43 per cent of all activity recorded in 2012 was obstetrics related. This means the calculation must include a factor to account for this level of obstetrics activity.

*The number of CCT holders required for obstetric services **ONLY** for each individual LW is between  $(c*U/n)*0.11+(c*U/n)*0.67*0.43$  and  $(c*L/n)*0.11+(c*L/n)*0.67*0.43$ .*

**E. Acknowledge we do not have data showing the actual split of activity based on time spent on obstetric vs gynaecological services and set a plausible range.**

The HES measure of activity does not take into account the relative intensity and thus the actual time spent delivering the 43 per cent of activity. It is likely that obstetric procedures take longer on average than gynaecological services and so 43 per cent is likely to be an underestimate of the true proportion, and is considered to be the lowest proportion. To address this possible underestimation, a second proportion – the highest likely proportion of 75 per cent – is assumed as the highest proportion of time spent on obstetrics by O&G CCT holders. This results in a broader range of possible values for the number of additional CCT holders required for seven-day consultant-led care.

The number of CCT holders required for obstetric services ONLY for each individual LW is between  $(c*U/n)*0.11+(c*U/n) * (0.67*0.75)$  and  $(c*L/n) *0.11+(c*L/n) * (0.67*0.75)$ .

#### F. Final range of estimates

The above approach results in a matrix of the estimated possible number of additional CCT holders required to deliver seven-day consultant-present care for obstetric services, which ranges from about 180 to 500 FTE (see Table 8).

Table 8: Matrix of the estimated possible number of additional CCT holders required to deliver seven-day obstetric services

Percentage of time spent on obstetrics only activity by O&G CCT holders	Lower bound / FTE (43 per cent of all deliveries involve a CCT holder)	Upper bound / FTE (76 per cent of all deliveries involve a CCT holder)
43%	183	326
75%	282	501

Source: CfWI modelling

Note that these numbers could still be underestimated when one considers job plans and attempts to staff rotas in LWs with small numbers of consultants. One of the issues facing staffing LWs to deliver seven-day consultant-present care is to provide a sufficient gap between weekend and/or night shifts. At smaller LWs, consultants would be required to work weekend or night shifts much more regularly than consultants at larger wards. Additionally, the relatively low activity levels at smaller wards may make it difficult to utilise consultant time efficiently in a seven-day consultant-present care system.

#### E5: Conclusion

Changes to the number of doctors recruited into specialty training annually may need to consider any official plans to implement seven-day obstetric care. However, given the range of estimates, and the CfWI supply forecasts, it is likely that there are enough doctors in training to provide the additional number of consultants required to provide seven-day obstetric consultant-present care.

Although the move to seven-day consultant-led care promises improved patient outcomes, it is important to consider planning the implementation and evaluation of such a system. Some of the many questions around the implementation of seven-day consultant-led care are listed below.

- Should all LWs, regardless of activity and population, provide seven-day obstetric care?
- Should a lower number of hours per week (around 60 or 98) be considered for some LWs?
- What degree of presence will be required from support staff for the extended hours?
- Would consolidation of some LWs be sensible and would it make seven-day care more achievable?
- How will the NHS fund this potential high increase in the O&G CCT holder workforce?

#### E6: Worked example

**A. Estimate the proportion of deliveries performed by CCT holders.**

The proportion of unplanned deliveries involving a CCT holder is expected to be between 43 and 76 per cent.

**B. Estimate the proportion of deliveries performed by CCT holders outside of the 2012-reported CCT holder presence for each individual LW.**

The total number of deliveries by each trust,  $n = 5900$ .

The number of hours recorded as consultant presence for each trust,  $p = 48$  hours.

The number of hours of consultant presence required per week, in this case 168 hours for seven days.

*The number of deliveries (d) performed outside of consultant-present hours for each LW is*  
 $d = n * (168-p)/168 \rightarrow 5900 * (168-48)/168 = 4214$

*The number of deliveries performed by CCT holders outside of the 2012-reported CCT holder presence for each individual LW is between the upper bound, U, of 76 per cent \* d and the lower bound, L, of 43 per cent \* d.*

$$U = 0.76 * 4214 = 3203$$

$$L = 0.43 * 4214 = 1812$$

*The proportion of deliveries performed by CCT holders outside of the 2012-reported CCT holder presence for each individual LW is between  $U/n$  and  $L/n$ .*

$$U = 0.76 * 4214 = 3203 \rightarrow U/n = 3203/5900 = 54 \%$$

$$L = 0.43 * 4214 = 1812 \rightarrow L/n = 1812/5900 = 31 \%$$

**C. Estimate the number of CCT holders required to perform the proportion of deliveries for each individual LW.**

The number of consultants employed by each trust (LW),  $c = 19$ .

The number of CCT holders required to perform the estimated proportion of deliveries for each individual LW is between  $c*U/n$  and  $c*L/n$ .

$$\text{Upper bound} \rightarrow c*U/n = 19 * 0.54 = 10.2 \text{ FTE}$$

$$\text{Lower bound} \rightarrow c*L/n = 19 * 0.31 = 5.9 \text{ FTE}$$

**D. Include correction to exclude gynaecology services from seven-day consultant-present care, i.e. estimate the number of CCT holders required for obstetric services ONLY.**

The number of CCT holders required for obstetric services for each individual LW is between  $(c*U/n)*0.11+(c*U/n)*0.67$  and  $(c*L/n)*0.11+(c*L/n)*0.67$ .

$$\text{Upper bound} \rightarrow (c*U/n)*0.11+(c*U/n)*0.67 = 10.2*0.11 + 10.2*0.67 = 8 \text{ FTE}$$

$$\text{Lower bound} \rightarrow (c*L/n)*0.11+(c*L/n)*0.67 = 5.9*0.11 + 5.9*0.67 = 4.6 \text{ FTE}$$

The number of CCT holders required for obstetric services **ONLY** for each individual LW is between  $(c*U/n)*0.11+(c*U/n)*0.67*0.43$  and  $(c*L/n)*0.11+(c*L/n)*0.67*0.43$ .

$$\text{Upper bound} \rightarrow (c*U/n)*0.11+(c*U/n)*0.67*0.43 = 10.2*0.11 + 10.2*0.288 = 4 \text{ FTE}$$

$$\text{Lower bound} \rightarrow (c*L/n)*0.11+(c*L/n)*0.67*0.43 = 5.9*0.11 + 5.9*0.288 = 2.3 \text{ FTE}$$

**E. Acknowledge we do not have data showing the actual split of activity based on time spent on obstetric vs gynaecological services and set a plausible range.**

The number of CCT holders required for obstetric services ONLY for each individual LW is between  $(c*U/n)*0.11+(c*U/n) * (0.67*0.75)$  and  $(c*L/n) *0.11+(c*L/n) * (0.67*0.75)$ .

*Upper bound ->  $(c*U/n)*0.11+(c*U/n) * (0.67*0.75) = 10.2*0.11 + 10.2* 0.5 = 6.2$  FTE*

*Lower bound ->  $(c*L/n) *0.11+(c*L/n) * (0.67*0.75) = 5.9*0.11 + 5.9* 0.5 = 3.6$  FTE*

**F. Final range of estimates:**

**Table 9: Final range of estimates**

Percentage of time spent on obstetric-only activity by O&G CCT holders	Lower bound / FTE (43 per cent of all deliveries involve a CCT holder)	Upper bound / FTE (76 per cent of all deliveries involve a CCT holder)
43%	2.3	4
75%	3.6	6.2

Therefore, this LW requires between two and six FTE more CCT holders to provide seven-day consultant-led care. Please note this worked example is for illustrative purposes only. It is likely that in addition to employing the additional CCT holders, the trust would need to modify the rota and thus the job plans of the CCT holders providing the service.

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