



CENTRE
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INTELLIGENCE

Migration Advisory Committee (MAC) - Healthcare occupation submission

Main report for the 2014 Shortage Occupation List (SOL)

February 2015

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Executive summary

Introduction

The Migration Advisory Committee (MAC) is a non-statutory, non-departmental public body, sponsored by the UK Border Agency, with the remit of advising the Government on migration issues. As part of its role, the MAC is responsible for reviewing the Shortage Occupation List (SOL) for the United Kingdom and an additional SOL for Scotland.

The SOL comprises Tier 2¹ skilled occupations (of the points-based immigration system) where, in the MAC's view, there are shortages that can only be sensibly filled by facilitating employers to recruit non-European Economic Area (EEA) migrants.

The Centre for Workforce Intelligence (CfWI) was jointly commissioned by the Department of Health (DH) and Health Education England (HEE) to prepare the healthcare submission to the MAC, in response to its recent call for evidence (MAC, 2014). This work builds on previous CfWI submissions (2011, 2012a) and the MAC's comprehensive review of the SOL, published in February 2013 (MAC, 2013). The CfWI work covers England only.

The Government's commission to the MAC for this partial review asked it to focus on:

...a small number of occupations where there may be a case for inclusion on or removal from the SOL [including] graduate occupations within the health sector including consultant roles, nurses and training grades.

...The MAC is asked to review the above occupations to determine whether there is a shortage of labour in the occupation, or in relation to specific jobs within that occupation, that it would be sensible to fill using labour from outside the EEA, and which therefore merits inclusion on the SOL for the UK or the additional SOL for Scotland.

Structure of this submission

The submission is split into three parts:

- **Main report** – Outlines the approach taken by the CfWI in determining its recommendations for the MAC's update of the SOL and summarises the CfWI's findings and recommendations.
- **Section A** – An assessment of the evidence for each healthcare occupation that the CfWI believes should be included on the SOL.
- **Section B** – An assessment of the evidence for each healthcare occupation that the CfWI believes lacks sufficient evidence to justify inclusion on the SOL.

¹ Tier 2 (General) – refers to skilled workers with a job offer in the UK. Tier 2 is made up of the resident labour market test (RLMT) route and the shortage occupation route, plus the inter-company transfer route. The national shortage occupation route enables employers to apply to bring in workers from outside of the EEA without going through the RLMT if the occupation is on the Tier 2 national shortage occupation list.

Criteria for inclusion on the SOL

The methodology developed by the MAC (2013) for determining whether to recommend that an occupation or job title be placed or retained on the shortage list requires that it pass three tests:

- Is the individual occupation or job title sufficiently **skilled** to be included on the list?
- Is there a **shortage** of labour – that is evidence of significant supply-side issues resulting in an absolute national shortage within each skilled occupation or job title – sufficient to merit inclusion or retention on the list?
- Is it **sensible** for immigrant labour from outside the EEA to be used to fill this shortage?

In order to submit an inclusion recommendation for the SOL, the Department of Health asked CfWI to consider whether an occupation could provide evidence of structural supply-side issues resulting in an absolute national shortage within each skilled occupation or job title sufficient to merit inclusion or retention on the list. Only where there is evidence of structural supply-side issues has a recommendation for inclusion been made providing there is also evidence that it would be sensible to fill these posts using labour from outside the EEA.

For example, an occupation with recruitment difficulties in the majority of geographies in the UK does not necessarily constitute a structural supply side shortage, as there can be a variety of other reasons for a shortage, such as regional variations in supply, or competition from other career paths or between sectors of employment. Whilst an occupation with recruitment difficulties in all geographies could be facing a structural supply side shortage, it may still be sensible to not include such professions if there are no evidence that the shortages can be filled using labour from outside of the EEA.

The Government's MAC 2012 report (MAC, 2012) indicated that all occupations that have been on the SOL for a given period, in principle two years, should be removed regardless of the shortages affecting the sector concerned. This is a reflection of the fact that inclusion on the SOL is intended to provide temporary relief while measures are taken to mitigate a shortage. Where there is evidence of a structural supply-side issue causing an absolute national shortage, the CfWI has also estimated how long that occupation is likely to remain in shortage.

The lack of inclusion of a particular staff group from the SOL for the UK does not prevent employers from recruiting professionals from overseas. It only means that employers will not have the option of expedited non-EEA recruitment, and that the resident labour market test (RLMT) must be met before an overseas professional may be appointed by an employer. However, The CfWI recognises that if the Tier 2 cap is reached this may prevent employers from recruiting overseas professionals.

This submission consists of an assessment of those occupations currently on the list and a recommendation that they should be retained or, due to lack of evidence, removed from the list. The review also looks at health occupations not currently included on the SOL and provides recommendations regarding which additional occupations should be placed on the list.

Healthcare occupations recommended for inclusion on the SOL

In June 2014 the CfWI began gathering evidence on possible shortage occupations in the healthcare sector in England, in order to support a potential review of the SOL by the Migration Advisory Committee through a call for evidence survey. The CfWI received 77 responses that highlighted specialties/professions in which people or organisations believed there was a national occupational shortage. The CfWI analysed the responses to the call for evidence, along with its own secondary research, and used them to inform these findings.

Based on the evidence available, and applying the MAC's 'skilled, shortage and sensible' tests, the CfWI recommends that the following **seven** healthcare occupations be **retained** on the SOL for the United Kingdom:

- diagnostic radiographers
- emergency medicine (consultants, non-consultant non-training doctors² (NCNTs), core training at year 3 (CT3), and specialty training at year 4 (ST4) to ST7 trainees)
- nuclear medicine (scientists and practitioners)
- neurophysiology (healthcare scientists and practitioners)
- psychiatry of old age (consultants, NCNTs)
- radiotherapy physics (scientists and practitioners)
- sonographers.

The CfWI also recommends that the following **six** healthcare occupations be **placed** on the SOL:

- clinical radiology (consultants)
- general practitioners
- paramedics
- paediatrics (NCNTs)
- prosthetists and orthotists
- psychiatry (core trainees).

Specific occupations recommended for inclusion are summarised in Table 1. The estimated shortage length shows the minimum range of time the CfWI believes the occupation will remain in shortage. **This is subject to review.**

Please see the supporting document *Section A – Occupations recommended for inclusion on the SOL* for the relevant evidence used to arrive at these.

Healthcare occupations where there is insufficient evidence to justify inclusion on the SOL

Based on the evidence available, and applying the MAC's 'skilled, shortage and sensible' tests, the CfWI recommends that the following **seven** healthcare occupations be **removed** from the SOL for the United Kingdom:

- anaesthetics (NCNTs)
- general medical specialties delivering acute care services (general internal medicine (acute)), (NCNTs)
- haematology (consultants)
- psychiatry (NCNTs)
- rehabilitation medicine (NCNTs)
- specialist nurses working in neonatal intensive care units
- therapeutic radiographers.

The CfWI also recommends that the following **13** healthcare occupations which were put forward are **not placed** on the SOL for the UK due to insufficient evidence that they met the MAC's tests:

² NCNTs refer to trust doctors, clinical fellows, staff grade, specialty doctors or associate specialists and other doctors that are not in training and are not consultants.

- acute medicine (consultants)
- adult nurses
- cardiac physiologists (healthcare scientists)
- dermatology (consultants)
- gastroenterology (consultants and NCNTs)
- geriatric medicine (consultants)
- non-medical/nurse endoscopists
- occupational therapists
- ophthalmology (consultants)
- paediatric pathology (consultants)
- sleep physiologists
- specialist nurses working in operating theatres
- specialist nurses working in paediatric intensive care units.

Specific occupations not recommended for inclusion are summarised in Table 2. Please see the supporting document *Section B – Occupations not recommended for inclusion on the SOL* for the relevant evidence used to arrive at these recommendations.

The CfWI recommends the following healthcare occupations for inclusion on the SOL:

Table 1: CfWI recommends the following 13 specialties/professions for inclusion on the Shortage Occupation List (SOL)

Area	Healthcare occupation	Shortage estimation ³
Allied health professionals	Medical radiographers (2217) – HPC registered diagnostic radiographers	4 – 5 years
Allied health professionals	Paramedics (3213) – Paramedics	2 – 4 years
Allied health professionals	Therapy professionals not elsewhere classified (2229) – Prosthetists and orthotists	Minimum 4 years
Allied health professionals	Medical radiographers (2217) – Sonographers	4 – 5 years
Healthcare scientists	Biological scientists and biochemists (2112) – Neurophysiology healthcare scientists Medical and dental technicians (3218) – Neurophysiology practitioners	4 – 5 years
Healthcare scientists	Physical scientists (2113) – Nuclear medicine scientists Medical and dental technicians (3218) – Nuclear medicine practitioners	4 – 5 years
Healthcare scientists	Physical scientists (2113) – Radiotherapy physics scientists	4 – 5 years

³ Possible range for shortage length - subject to review. For more detail on the methodology adopted, see 1.15.

	Medical and dental technicians (3218) – Radiotherapy physics practitioners	
Medical specialties	Medical practitioners (2211) – Consultants: Clinical radiology	6 years
Medical specialties	Medical practitioners (2211) – Consultants, NCNT medical staff post and CT3, ST4-ST7 trainees: Emergency medicine	5 – 6 years
Medical specialties	Medical practitioners (2211) – General practitioners	3 - 5 years
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: Paediatrics	2 years (minimum)
Medical specialties	Medical practitioners (2211) – Consultants and NCNT medical staff post: Old age psychiatry	7-10 years
Medical specialties	Medical practitioners (2211) – Psychiatry core trainees (CPT1)	5 years

The following specialties/professions are not recommended for inclusion on the SOL:

Table 2: The following 19 specialties/professions lack evidence for inclusion on the SOL

Area	Healthcare occupation
Allied health professionals	Occupational therapists (2222) – Occupational therapists
Allied health professionals	Medical radiographers (2217) – HPC registered therapeutic radiographers
Healthcare scientists	Biological scientists and biochemists (2112) – Cardiac physiologists
Healthcare scientists	Biological scientists and biochemists (2112) – Sleep physiologists
Medical specialties	Medical practitioners (2211) – Consultants: Acute medicine (including general internal medicine)
Medical specialties	Medical practitioners (2211) – Consultants: Dermatology
Medical specialties	Medical practitioners (2211) – Consultant and NCNT medical staff post: Gastroenterology
Medical specialties	Medical practitioners (2211) – Consultants: Geriatric medicine
Medical specialties	Medical practitioners (2211) – Consultants: Haematology

Medical specialties	Medical practitioners (2211) – Consultants: Paediatric pathology
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: Anaesthetics
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: General medical specialties delivering acute care (including general internal medicine)
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: Ophthalmology
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: Psychiatry (with the exception of old age psychiatry)
Medical specialties	Medical practitioners (2211) – NCNT medical staff posts: Rehabilitation medicine
Nursing and midwifery	Nurses (2231) – Adult nurses
Nursing and midwifery	Nurses (2231) – Nurse endoscopists and non-medical endoscopy practitioners
Nursing and midwifery	Nurses (2231) – Specialist nurses working in paediatric and neonatal intensive care units
Nursing and midwifery	Nurses (2231) – Specialist nurses working in operating theatres

1. Approach

This section outlines the approach taken by the CfWI in determining its recommendations for the MAC update of the shortage occupation list (SOL).

1.1 Stakeholder engagement

The CfWI engaged with a range of stakeholders throughout the project in order to ensure that the views of both service providers and representative bodies were considered. The following stakeholders were invited to provide primary research through the completion of surveys and interviews:

- professional advisory boards (PABs)
- Health Education England (HEE) professional boards
- local education and training bodies (LETBs)
- health trade unions
- employers (e.g. Foundation Trust Network, NHS Employers, Independent Healthcare Advisory Service)
- royal colleges and professional bodies
- private sector providers.

In order to provide expertise, governance and assurance to the project, a stakeholder steering group was formed.

1.1.1 Project steering group

A project steering group was established consisting of key stakeholders across all disciplines, including DH policy leads and employer organisations. The purpose of this group was to provide a steer on the options to reduce the existing shortage, and to review and sign off the final evidence submissions within their specialist areas. The CfWI has engaged with the members of the steering group on an individual basis through consultations where verification of data and analysis was required. Members of the steering group also attended the stakeholder workshop that CfWI held on 29 September 2014.

1.1.2 Stakeholder workshops

Two workshops (medical and non-medical) were held with representation from the project steering group, employer organisations, royal colleges and professional bodies for those occupations recommended for inclusion on the revised SOL. The purpose of the medical and non-medical workshops was to review the options for reducing the current shortage and agree the estimated length of time that the occupation is likely to remain in shortage, depending on which options can be applied. The list of stakeholders engaged in this project is in Appendix A.

1.2 Evidence collection

The CfWI collated and analysed both primary and secondary research to enable robust recommendations to be made.

1.2.1 Primary research

Organisations in the health arena that are well placed to consult with their members / representative bodies (see section 1.1 for details) were approached through the project steering group to complete an online survey providing evidence that:

- an occupation is skilled (NQF6+⁴)
- it is in absolute and national shortage⁵
- the shortage can only be sensibly filled by recruitment outside the EEA (CfWI, 2014).

Once all survey responses had been collated and reviewed, the CfWI held semi-structured interviews with stakeholders where further evidence/research was required. A summary of the primary research for each occupation was then produced and verified by the relevant member of the project steering group.

1.2.2 Secondary research

To supplement the primary research gathered, the CfWI reviewed other research available, including its previous publications relevant to this project and its existing evidence base, primarily using the following series of reports:

NHS Employers: 2013 NHS Employers workforce survey findings

In July 2013 the NHS Employers organisation invited HR directors from across the NHS to participate in a workforce survey. The survey gathered information about pay awards and affordability, recruitment, retention, workforce supply and service demand.

Migration Advisory Committee (MAC) report: *Skilled shortage sensible* (2013)

The sixth iteration of the shortage occupation list under Tier 2 of the Points Based System for work immigration from outside the European Economic Area (EEA): a full review of the recommended shortage occupation lists for the UK and Scotland, a sunset clause and the creative occupations.

Centre for Workforce Intelligence (CfWI): non-medical and medical dashboards

Summary workforce dashboards and supply projections for each medical specialty and non-medical profession to support Health Education England's (HEE) development of its 2014/15 Workforce Plan for England.

NHS Careers

The information service for careers in the NHS in England, with listings of more than 350 different NHS careers.

⁴ National Qualifications Framework Level 6 qualifications recognise a specialist high level knowledge of an area of work or study to enable the use of an individual's own ideas and research in response to complex problems and situations. Learning at this level involves the achievement of a high level of professional knowledge (usually equivalent to Bachelor's degrees with honours).

⁵ In relation to the absolute and national shortage, in order to submit an inclusion recommendation for the SOL, the CfWI was asked to consider whether an occupation is suffering from structural supply-side issues that cannot be mitigated through improving workforce supply from the domestic labour market, or via migration through the traditional routes, therefore satisfying the resident labour market test (RLMT) criteria. Only where there is evidence of structural supply-side issues will a recommendation for inclusion be made. For example, an occupation with recruitment difficulties in the majority of regions does not necessarily mean there is a national supply-side shortage, as there can be a variety of other reasons for a shortage, such as regional variations in supply, competition from other career paths or between sectors of employment. This is a reflection of the fact that inclusion on the SOL is intended to provide temporary relief while measures are taken to mitigate a shortage.

NHS Jobs online

NHS Jobs is a dedicated online recruitment service for the NHS. Every NHS organisation within England and Wales advertises its job opportunities with NHS Jobs. In addition a number of organisations outside the NHS also advertise their health related vacancies on NHS Jobs. It is important to note that a vacancy does not imply or confirm that an occupation is in shortage. NHS Jobs online provide only a snapshot of current vacancies. The CfWI did not have access to long-term vacancy rates as the three month NHS Vacancy Survey was last commissioned in 2010.

General Medical Council (GMC) data

This is a dataset provided to the CfWI by the GMC, specifically for the purpose of the MAC project. It comprises a snapshot of all of the doctors registered with the GMC as of 10 October 2014. The CfWI uses the year of first registration for non-EEA doctors and compares it with their year of specialist registration to investigate how long it takes doctors from non-EEA countries who first registered with the GMC to gain entry onto the specialist register. This provides an indication of which specialties have equivalent level doctors in non-EEA countries who could be recruited into the specialty and gain specialty registration within one year in the UK. For those that take longer than one year it is likely that the GMC requires further evidence of equivalence before they are admitted to the specialty register and as such they cannot be employed as a specialist. For NCNTs, the CfWI compared the first registration year with the employment start date to examine how many non-EEA doctors began UK employment in the same year as when they first registered. This helps to indicate whether there is a viable non-EEA supply of NCNT level doctors who can begin employment within one year of first registering with the GMC for a given specialty. GMC data is not used to establish whether an occupation is in shortage or not.

Home Office Certificates of Sponsorship (CoS) data

The Home Office data shows all of the Certificates of Sponsorship (CoS) awarded from 2009 to October 2014. In order to apply for a Tier 2 UK visa, an applicant must have a valid CoS from the employer who has offered him/her a job. The CoS does not guarantee a Tier 2 visa and as such the CoS only indicates that an employer is desirous of employing someone from outside the EEA and believes that the individual to whom they have provided the CoS is a good candidate for the respective job. The CfWI did not have data indicating whether the CoS was a 'first permission' or an 'in country extension', which means that it is unclear how many people awarded a CoS are already in the UK and how many are applying for the first time to enter the UK. CoS data is only used to assess whether there is a viable non-EEA supply of an occupation. It is not used to establish whether an occupation is in shortage or not. Not all individuals using CoS may be granted visas since some may have their visa applications rejected. Furthermore, even when a visa is granted, a person may not travel to the UK and there is a further risk that on arrival they may also not be admitted. The CfWI did not have access to the data regarding how many staff were employed within the UK from the outside of the EEA labour market.

1.2.3 Secondary research limitations

It is important to note that the CfWI endeavoured to use all of the available workforce data and evidence for each profession/specialty. There are instances where the CfWI was unable to comment on workforce size, historical trends, training numbers and vacancy rates due to e.g. a profession/specialty not being currently coded and recorded on the HSCIC database.

The CfWI used the GMC and Home office data regarding CoS to assess the 'sensible' test for those specialties/professions that proved to be in an absolute national shortage. This data was used to verify that it is sensible to fill the shortages using labour from outside of the EEA i.e. that there is a suitable pool of recruits

who have relevant qualifications, training and skills equivalent to the requirements in England. However, there is a further caveat to this, as not all individuals using a CoS may be granted visas due to some visa applications being rejected. Furthermore, even when a visa is granted, a person may not travel to the UK and there is a further risk that on arrival they may also not be admitted. The CfWI did not have access to the data regarding how many staff were employed within the UK under a Tier 2 visa.

1.3 Applying the MAC's skilled, shortage and sensible tests

Each specialty/profession has been scrutinised by CfWI experts to determine if they meet the criteria for SOL inclusion. The CfWI classified this in four sections: skilled, shortage, sensible and recommendation. These are explored in more detail below.

Criteria for SOL inclusion:

Skilled: An occupation must be skilled to National Qualifications Framework (NQF) level six or above (NQF6+) to qualify under Tier 2 of the Points Based System. Where an occupation is not skilled to NQF6+ but partners consider that a job title within that occupation is skilled to that level (and is in shortage) then partners must provide evidence to the MAC of the skill level of the job in line with the criteria identified in this call for evidence. When assessing job titles, evidence on qualifications and earnings are taken into account alongside two other indicators of the skill required to carry out the job at the appropriate level, namely:

- on the job training or experience; and
- innate ability (MAC, 2014).

In absolute shortage:

To be considered a shortage occupation, a specialty or profession must

- have evidence of a shortage of supply in the labour pool in England
- demonstrate that the shortage exists nationally, i.e. across all geographical regions in England
- demonstrate the shortage is ongoing and sustained
- demonstrate the shortage has not been resolved through supply levers, such as increasing the attractiveness of a specialty and/or profession
- demonstrate the shortage cannot be sensibly met by recruiting from other UK countries
- demonstrate the shortage cannot be sensibly met by recruiting from the European Economic Area (EEA).

'Sensible': If an occupation is identified as being in absolute shortage, it must prove that the only method for relieving the shortage is recruitment from outside the EEA. To clarify this, the CfWI will consider the following key questions:

- What are the alternatives to employing migrants?
- Is there a viable pool of labour outside of the EEA?
- How would bringing in migrants relate to skills acquisition of the UK workforce? Are there enough UK resident workers in training and education to fill shortages? Will bringing in migrants reduce employers' incentives to invest in training and upskilling of UK workers?

- How will the employment of migrants affect investment, innovation and productivity growth?
- How will a decision to add an occupation to the Tier 2 shortage occupation list affect the wider UK labour market and economy? How, if at all, will access to migrant labour affect employment opportunities and conditions of the UK workforce?

1.4 Modelling and assumptions

For this project, the CfWI used its existing non-medical supply model from models, with updated data and assumptions, which were used the last time the CfWI submitted evidence to the MAC on behalf of DH in 2012. These models were also used to inform the *Workforce Risks and Opportunities Education Commissioning Risk Summaries* (CfWI, 2012b). The supply models used to inform the evidence submitted for the medical specialties comprised the models used in the *Shape of the Medical Workforce* (CfWI, 2012c) as well as models used in more recent in-depth reviews, where available. This suite of models was also used to help inform Health Education England's (HEE) planning round during the summer of 2014.

1.4.1 Non-medical model

The non-medical model is designed to forecast the number of registered professionals in England from 2014 to 2019 for each specified profession. The CfWI chose this method because the NHS operates in an environment where any qualified provider can provide the required service so the workforce providing care can be employed inside or outside the NHS. The model forecasts the potential workforce available to future employers. The supply forecast does not define the number to be employed, or who the employers will be.

1.4.2 Medical model

The medical model is designed to forecast the number of Certificate of Completion of Training (CCT) holders for each of the GMC-approved medical specialties to 2023. The following sources have been used to formulate the model: HSCIC workforce data from 2013 and data from CfWI modelling for an unpublished HEE workforce stocktake covering 2013 to 14 (HEE, 2014 a, b, c, HSCIC, 2014a, b, c). Data has also been sourced from the specialties where available. The modelling assumptions were based on stakeholder engagement carried out in the previous 12-18 months as well as from involvement with the HEE stakeholder engagement with all of the specialties over the summer of 2014.

1.4.3 Out of scope

The approach to, and modelling of, the medical and non-medical workforces did not include:

- UK-wide recommendations – the CfWI is commissioned to do work in England only; this work used data available to the CfWI on an England only basis
- modelling or analysis of the impact of internal migration between the four UK countries, as the information was not available
- in-depth demand modelling – the work did not take account of service activity data, health indicators or consultant vacancies, as the CfWI did not have detailed and accurate demand intelligence that it could model
- modelling or analysis of NCNTs including trust doctors, clinical fellows, staff grade, specialty doctors or associate specialists– the CfWI had concerns about the robustness of this data (this applies only to the medical workforce).

1.4.4 Further explanation

For a more detailed explanation of how the CfWI used data and assumptions to create supply and demand projections, please see the detailed technical specifications and papers:

For a more detailed explanation of how the CfWI used data and assumptions to create supply and demand projections, please see the detailed technical specifications and papers:

- Centre for Workforce Intelligence (2012b) technical report: *Workforce risks and opportunities – education commissioning risks summary from 2012*
- Centre for Workforce Intelligence (2012c) *Shape of the medical workforce: Starting the debate on the future consultant workforce*
- Centre for Workforce Intelligence (2014) CfWI technical paper series no. 0008: *Developing robust system-dynamics-based workforce models: A best-practice approach*.

1.5 Shortage length estimation method

To determine the estimated shortage lengths for occupations considered to be in shortage, the CfWI:

- identified the size of immediate shortage(s)
- considered the future drivers that will impact on individual occupations
- generated possible options for reducing a shortage
- tested potential options with members of the project steering group
- estimated the shortage length
- validated options and estimated shortage lengths with the project steering group, as well as any relevant royal colleges and professional bodies, as required.

1.6 Key terms

For the purpose of this submission, the following key terms have been used:

- skilled – confirmation that the occupation is sufficiently skilled (NQF6+) to be included on the national shortage occupation list
- future drivers – consideration of the changing shape of the workforce and healthcare delivery (policy, technology, economic climate, activity drivers, etc.)
- shortage – presentation of national shortage evidence and estimation of the size of the current shortage as a time span
- sensible – judgement as to whether occupations with a labour shortage would be sensibly filled using non-EEA labour
- non-consultant non-training doctors (NCNTs) – refer to trust doctors, clinical fellows, staff grade, specialty doctors or associate specialists and other doctors that are not in training and are not consultants.

Appendix A – Stakeholder engagement

Name	Job title	Organisation
Beth Barnes	Head of Professional Standards	The Royal College of Ophthalmologists (RCOphth)
Charlotte Beardmore	Director of Professional Policy	Society and College of Radiographers
Peter Bill	Chairman	Association of Neurophysiological Scientists
Dr Richard Billings	HCS consultant to HEE	Health Education England (HEE)
Dr Joe Booth	Head of Specialty Training	Royal College of Radiologists
Dr Richard Bryant	Director of Training and Examinations	Royal College of Anaesthetists
Jonathan Bull	Chair	British Association of Prosthetists and Orthotists
Mike Burgess	Associate Head of Workforce Planning	Health Education North West
Ann Burrell	Director of Human Resources and Education	North Tees & Hartlepool NHS Foundation Trust
Valerie Campbell	Administrator	The College & Society of Clinical Perfusion Scientists of GB and Ireland
Julie Chapman	Workforce capacity and Information Strategy Lead	Department of Health
Nikki Cochrane	Head of Training & Workforce Operations	Royal College of Psychiatrists
Anzhelika Coffey	Workforce Planning Lead	Health Education East of England
Dr Nicki Colledge	Director of Education	Royal College of Physicians of Edinburgh
Karen Darley	Workforce and Analysis Manager	The Royal College of Radiologists (RCR)

Lynn Demeda	Deputy Director of Workforce	Guy's & St Thomas' NHS Foundation Trust
Karen Didovich	Senior Employment Relations Advisor for Workforce	Royal College of Nursing
Annesley Donald	Interim Associate Director of Workforce	Cambridge University Hospitals NHS Foundation Trust
Sue Dutch	Clinical Senate Programme Lead	NHS England
Dave Edwards	Chairman	Society of Critical Care Technologies
Dr Anthony John Ellis	SAC Chair gastroenterology (consultant gastroenterologist)	Oxford University Hospitals
Richard Evans	Chief Executive Officer	Society and College of Radiographers
Dr Jemimah Eve	Workforce Intelligence Officer	Institute for Physics and Engineering in Medicine
Dee Fawcett	Director of Human Resources	Newcastle upon Tyne NHS Trust
Dr Harriett Gordon	Director MWU	RCP London
Dr Elaine Gouk	Clinical Director Obstetrics and Gynaecology	North Tees and Hartlepool NHS Foundation Trust
Lene Gurney	Practice and Policy Advisor	Independent Healthcare Advisory Services
Chris Harrison	Director of Human Resources	South Tees Hospitals NHS Trust
Claire Helm	Assistant Policy Advisor	Royal College of Nursing
Professor Amanda Howe	Vice Chair Council RCGP (Professional Development)	Royal College of General Practitioners
Lisa Hughes	Education and Quality Directorate Associate	Health Education England
Dr Jagat Jani	Clinical Director Paediatrics	North Tees and Hartlepool NHS Foundation Trust
David R Jones	Society Representative	British Sleep Society/ Association for Respiratory Technology & Physiology

Karen Launder	Recruitment and Resourcing Manager	Plymouth Hospitals NHS Trust
Hilary Lloyd	Policy Director	BMA
Claire Low	Medical HR Manager	St George's Healthcare NHS Trust
Anita McCallum	Business/Operations Manager	British and Irish Orthoptic Society
Helen Mansfield	Head of Workforce and Development and Business Intelligence	Health Education North West London
Derek Marshall	Chief Workforce Strategist and Planner	Health Education North East
Dr Giles Maskell	President	Royal College of Radiologists
Dr Phil McMillan	Quality Manager	College of Emergency Medicine
Steve McNeice	Service user	Geniums
Gordon Miles	CEO	The College of Emergency Medicine
Patrick Mitchell	Director of National Programmes	Health Education England
Andrew Mullinex	Policy Officer	Royal College of Surgeons of Edinburgh
Joanna Nightingale	Scientific Director	NHS South of England (East)
Pauline North	Medical Staffing Manager	Southport and Ormskirk NHS Trust
Dr Rory O'Connor	Chair	Rehabilitation Medicine Specialty Advisor Committee
Dr Aideen O'Halloran	Workforce Lead	Royal College of Psychiatrists
Dr Kevin O'Kane	Consultant in Acute Medicine	Society for Acute Medicine
David Prince	Director of Support Services	London Ambulance Service
Dr Mark Purvis	Director of Postgraduate GP Education	Royal College of General Practitioners
Sarah Race	Programme Specialist – Workforce Planning	Health Education West Midlands
Dr Emma Rowley-Conwy	Registered Manager	SELDOC (South East London Doctors Cooperative)

Emma Rushmer	Assistant Director – Human Resources	South Tees Hospitals NHS Foundation Trust
Julian Ryder	Revalidation and Workforce Manager	Royal College of Psychiatrists
Patricia Saunders	Senior Education and Policy Officer	Health Education England
Cris Scotter	Head of Strategic Supply, Workforce Division	Department of Health
Bridgitte Shallow	Head of Assessment and Care Management	London Borough of Newham
Dr Anton Sinniah	Deputy Medical Director	Pennine Acute Trust
Julia Skelton	Director of Professional Operations	British Association of Occupational Therapists
Dr Jonathan Smith	GP Lead	Cumbria CCG/Eden Locality, Health Education North East
Professor David Sowden	CfWI Professional Advisor	CfWI
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Appendix B – Data sources

Allied health professionals - data sources

British Association of Prosthetists and Orthotists (BAPO), *Workforce Planning Brief*

An unpublished workforce planning brief from the BAPO.

Cancer Research UK, *Vision for radiotherapy 2014-2024*

A report setting out NHS England's and Cancer Research UK's shared vision for the future of innovation in radiotherapy. It intends to inform NHS England's five-year strategy for radiotherapy services, which will be developed as part of the specialised services strategy planning in 2014.

Centre for Workforce Intelligence (CfWI), *non-medical dashboards*

Summary workforce dashboards and supply projections for each non-medical profession to support Health Education England's (HEE) development of its 2014/15 Workforce Plan for England.

CfWI, *Workforce risks and opportunities (WRO), Prosthetists and orthotists 2012*

A report describing the key issues facing the prosthetic and orthotic profession over the next three years, including considerations for future requirements, current and forecast supply, and a summary of national trends, regional variations and any associated risks.

Chas A Blatchford and Sons Ltd, on behalf of the British Healthcare Trades Association, *Shortage occupation list survey*

A response from the British Healthcare Trades Association to the SOL survey 2014.

Department of Health (DH), *Radiotherapy Services in England 2012*

This report was prepared by the national radiotherapy implementation group, established to advise the DH and ministers on radiotherapy services in England and to oversee and provide national support to local services in implementing the recommendations of the national radiotherapy advisory group report published in 2007.

NHS Careers

The information service for careers in the NHS in England, with listings of more than 350 different NHS careers.

NHS Careers, *Pay and benefits for AHP staff*

An indication of which agenda for change pay bands certain job titles fit into, based on the nationally produced job profiles. It can be used as a guide to the levels of pay.

NHS England, *Diagnostic Imaging Dataset (DID)*

DID is a central collection of detailed information about diagnostic imaging tests carried out on NHS patients, extracted from local radiology information systems (RIS) and submitted monthly. DID captures information about referral sources and patient types, details of the test (type of test and body site), demographic information such as registered GP practice, patient postcode, ethnicity, gender and date of birth, plus items about waiting times for each diagnostic imaging event, from time of test request through to time of reporting. The Health and Social Care Information Centre collects the dataset at patient level.

NHS Jobs online

NHS Jobs is a dedicated online recruitment service for the NHS. Every NHS organisation within England and Wales advertises its job opportunities with NHS Jobs. In addition a number of organisations outside the NHS also advertise their health related vacancies on NHS Jobs.

Health Education England (HEE), *Workforce Plan for England – Proposed Education and Training Commissions for 2014/15*

A document setting out the investments HEE intends to make in education and training programmes to begin in September 2014.

Health Education East of England and Sherwood Forest Hospitals Foundation Trust, *Securing the future of sonography workforce 2014*

Presentation by Ann Allen, Clinical Lead Sonographer, Sherwood Forest Hospitals Foundation Trust at the AHP Workforce Summit in Loughborough, 2 May 2014.

Public Health England (PHE), *Radiographer requirements of national cancer screening programmes*

A letter to the Society and College of Radiographers (SCoR) expressing concern that within the next few years there will be a significant shortage of qualified radiographers available to provide the national breast screening service.

Society and College of Radiographers (SCoR), *Diagnostic Radiography UK Workforce Report 2014*

In September 2014, the SCoR carried out a census of the diagnostic radiography workforce in the UK. The objectives were to establish the size, structure and vacancy rate of the workforce in order to inform workforce planning. Nearly 100 employers responded to an online questionnaire representing over 200 workplaces delivering radiography services, employing approximately 25 per cent of the diagnostic radiography workforce in the UK.

SCoR, *Census of the Radiotherapy Radiographic Workforce in the UK 2013*

This report provides a summary of the radiotherapy radiographic (therapeutic radiographers) workforce in the UK in the NHS and private/independent healthcare sector.

SCoR, *Direct Entry Undergraduate Ultrasound Programmes 2013*

The policy of the SCoR is to support the introduction of primary (BSc) degrees in ultrasound as one of the ways of increasing sonographer numbers. This briefing document outlines the key areas that will need to be considered.

SCoR, *Evidence Submission to CfWI from the Society and College of Radiographers 2014*

An evidence submission document from the SCoR in support of its application for inclusion of the various radiographer professions on the MAC SOL.

SCoR, *Sonographer Workforce Survey Analysis 2014*

In May and June 2014, the SCoR surveyed ultrasound departments in the UK. The aim of the survey was to obtain data on the number of sonographers employed and the number of vacancies. Nearly sixty ultrasound departments responded to an online questionnaire covering a range of questions about staffing and vacancy levels.

SCoR, *Workforce Planning: Policy Drivers and Innovations relevant to the Radiography Workforce 2014*

Members of the Health Education England Allied Health Professions Advisory Group (HEE AHP AG) were asked to provide information about current policy drivers and innovations relevant to workforce planning that will

result in education and training commissions for 2015/2016. This paper identifies those related to the radiography workforce.

Healthcare scientists - data sources

Association of Neurophysiological Scientists (ANS), response of ANS to MAC survey

Evidence submission document from the ANS in support of its application for inclusion on the MAC SOL.

Health Education England (HEE), Practitioner Training Programme (PTP) - national student population as at October 2013

A dataset from HEE showing the Modernising Scientific Careers (MSC) Practitioner Training Programme (PTP) and Scientific Training Programme (STP) student populations as at October 2013.

Health and Social Care Information Centre (HSCIC), NHS Hospital and Community Health Services: Non-Medical Workforce Census England: 2003 to 2013

A detailed view of the NHS non-medical workforce including nurses, scientists and support staff. It excludes medical or dental doctors in the hospital and community health services (HCHS), GPs and their staff.

Home Office, Work permits and Tier 2 certificates of sponsorship data, 2000 – 2011

An email communication from the Home Office to the CfWI regarding work permits and Tier 2 certificates of sponsorship data between 2000 and 2011.

Migration Advisory Committee (MAC), Migration Advisory Committee report: skilled shortage sensible 2013

The sixth iteration of the shortage occupation list under Tier 2 of the Points Based System for work immigration from outside the European Economic Area (EEA): a full review of the recommended shortage occupation lists for the UK and Scotland, a sunset clause and the creative occupations.

NHS Employers, 2013 NHS Employers workforce survey findings

In July 2013 the NHS Employers organisation invited HR directors from across the NHS to participate in a workforce survey. The survey gathered information about pay awards and affordability, recruitment, retention, workforce supply and service demand.

Office for National Statistics (ONS), National Population Projections, 2012-based projections

A principal projection for the UK - This table provides summary information including population totals in broad age groups, components of change, births, deaths and migration, children, working and pensionable age population, dependency ratios, average age of the population, expectation of life at birth, and total fertility rates. It covers mid-2012 to mid-2037 though some projections cover 100 years to 2112.

Nursing and midwifery

Centre for Workforce Intelligence, Future workforce nursing projections – starting the discussion, 2013

This report was designed to stimulate discussion on the main opportunities and challenges facing employers, the nursing profession and workforce decision makers in relation to the future balance of the supply and demand of the nursing workforce.

Centre for Workforce Intelligence, MAC SOL update healthcare professions submission, 2012

A report commissioned by the Department of Health for the MAC that influenced and supported its recommendations on securing the supply of the future healthcare workforce in shortage areas in England.

Health Education England, *Non-medical education and training (NMET) monitoring Quarter 3; Re: Commissions and attrition data, 2013* (Personal communication, 25 September 2013)

Health Education England, 2014. *Non-medical education and training (NMET) monitoring Quarter 4; Re: Q4 Activity* [email] (Personal communication, 14 May 2014)

Health and Social Care Information Centre, 2014. *NHS Workforce statistics in England, summary of staff in the NHS – 2003-2013*

Detailed data regarding the NHS HCHS workforce. Indicators include age, regional distribution and ethnic category. Data is further broken into specialty and employment grade categories.

Migration Advisory Committee, 2013 *skilled shortage sensible*

The sixth iteration of the shortage occupation list under Tier 2 of the Points Based System for work immigration from outside the European Economic Area (EEA). It includes a full review of the recommended shortage occupation lists for the UK and Scotland, a sunset clause and the creative occupations.

NHS Employers, *NHS Employers workforce survey findings 2013*

In July 2013 the NHS Employers organisation invited HR directors from across the NHS to participate in a workforce survey. The survey gathered information about pay awards and affordability, recruitment, retention, workforce supply and service demand.

NHS Employers, *NHS qualified nurse supply and demand survey – findings, 2014*

Report produced for HEE's nursing supply steering group. This survey provides information on demand and supply of the qualified nurse workforce in NHS service provider organisations.

NHS Jobs, 2014. *Search results*. [Online] Available at: <http://www.jobs.nhs.uk/> [Accessed September 2014]
NHS Jobs is a dedicated online recruitment service for the NHS. Every NHS organisation in England and Wales advertises its job opportunities with NHS Jobs. In addition, a number of organisations outside the NHS also advertise their health-related vacancies on NHS Jobs.

Royal College of Nursing, *RCN Labour market review: Safe staffing levels – a national imperative. The UK nursing labour market review 2013 and 2014*

These reports are the 2013 and 2014 annual review of the UK nursing labour market commissioned by the Royal College of Nursing.

Unison, *Running on empty: NHS staff stretched to the limit*

UNISON has conducted a staffing levels survey. Front-line nurses and midwives believe that national minimum nurse/midwife-to-patient ratios should be set.

Social care

National Minimum Data Set for Social Care (NMDS-SC) (2014) *Social care workforce information dashboards* [online] Available at: <https://www.nmds-sc-online.org.uk/reportengine/dashboard.aspx> [Accessed September 2014].

NMDS-SC holds data on the adult and social care workforce. The database holds information on around 25,000 establishments and 700,000 workers across England.

Care Home Group, Oxford, *Nursing Shortage UK 2014, Nursing – A Sector in crisis*. [e-mail] [Personal communication, 5 December, 2014].

Medical and dental - data sources

Blakey, J. LeJeune, I. Levy, M. Shaw, D E. Goddard, A F. 'General medicine's recruitment crisis: what happened to all the heroes?'

This *British Medical Journal Careers* article outlines current issues with general internal medicine. Low recruitment numbers and problems with the attractiveness of the profession are cited as key issues with the specialty.

Centre for Workforce Intelligence (CfWI), *Evidence gathered from workshop event.*

Evidence gathered during the CfWI's MAC stakeholder event, held on 29 September 2014.

CfWI, *In-depth review of the general practitioner workforce*

The CfWI's GP workforce review, published July 2014, that investigated supply and demand for the GP workforce. Modelling projections up to 2035 were made, with the need for GPs the main conclusion from the work.

CfWI, *In-depth review of the psychiatrist workforce*

The CfWI's psychiatry workforce review, published November 2014, that investigated supply and demand for the psychiatry workforce. Modelling projections up to 2033 were made, with the need for psychiatrists the main conclusion from the work.

CfWI, *Securing the future workforce supply: Clinical radiology stocktake, December 2012*

A CfWI stocktake report describing the key issues facing the clinical radiology workforce, including considerations for future requirements.

College of Emergency Medicine, *Applying for Specialty Training*

Information for applicants on specialty training, provided by the College of Emergency Medicine.

College of Emergency Medicine, *HEE Workforce Planning 2014/15 – Call for Evidence*

The College of Emergency Medicine's submission to the call for evidence in the HEE workforce planning round. It has been used in this instance to support the SOL inclusion, as it discusses many contingent issues.

Cumbria CCG/ Eden Locality, Health Education North East, *Response to MAC survey*

Cumbria CCG / Eden Locality's evidence submission document in support of general practice's inclusion on the MAC SOL.

Department of Health (DH), *NHS Next Stage Review: Our vision for primary and community care*

This 2008 DH strategy document outlines a vision for the next ten years of primary and community care. It is colloquially known as 'the Darzi Review', as it was conducted by Lord Ara Darzi.

DH, *The NHS Plan*

This 2000 DH strategy document discusses a plan for NHS investment and reform. The report outlines options for funding and delivering healthcare, workforce and facilities. This report was followed by the 2002 *Delivering the NHS Plan* report.

Hann, M., et al. *Seventh National GP Worklife Survey, University of Manchester*

This survey, conducted by the University of Manchester, investigates the working lives of GPs through looking at indicators such as job satisfaction and working hours. It also analyses GP commitments to clinical commissioning. Both cross-sectional and longitudinal samples were used in the survey.

HCL Workforce Solutions, The Real Emergency in Emergency Departments: Is the chronic shortage of England's A & E doctors reaching crisis point?

Article published by HCL Workforce Solutions (a medical staffing agency) regarding trends in supply and demand in emergency medicine. The report concludes that there is a chronic shortage of trained emergency medics.

Heath Education England, Emergency Medicine: Background to HEE & CEM proposals to address workforce shortages

The findings of an HEE emergency medicine workforce taskforce. The proposals aim to boost numbers in emergency medicine, with solutions including piloting new routes into emergency medicine, allowing earlier exposure to emergency medicine in core training, and developing transferable competencies to shorten emergency medicine training.

Health Education East of England, Response to MAC survey

Evidence submission document from Health Education East of England in support of the inclusion of, among others, general practice, to the MAC SOL.

Health Education England, Securing the Future GP Workforce: Delivering the Mandate on GP Expansion

HEE's GP taskforce report, which investigates and recommends methods to boost GP workforce recruitment and retention, as well as looking at the state of the current profession.

Health and Social Care Information Centre (HSCIC), GP Practice Vacancies Survey 2010

A survey conducted by the HSCIC regarding vacancies and recruitment in general practice. This is the most recent edition.

HSCIC, NHS Hospital and Community Health Service (HCHS) Workforce Statistics in England, Medical and Dental staff – 2003-2013

Detailed data regarding the NHS HCHS workforce. Indicators include age, regional distribution and ethnic category. Data is further broken into specialty and employment grade categories.

Newcastle upon Tyne Hospitals NHS Foundation Trust, response to MAC survey

Evidence submission document from Newcastle upon Tyne Hospitals NHS Foundation Trust in support of the inclusion of emergency medicine on the MAC SOL.

NHS Jobs online

NHS Jobs is a dedicated online recruitment service for the NHS. Every NHS organisation in England and Wales advertises its job opportunities with NHS Jobs. In addition, a number of organisations outside the NHS also advertise their health-related vacancies on NHS Jobs.

NHS Specialty Training Competition ratios

Data regarding the application figures for specialty training. This data includes calculations for the relative competition ratios for each specialty.

Royal College of General Practitioners, Response to MAC survey

Evidence submission document from the Royal College of General Practitioners in support of the inclusion of general practice on the MAC SOL.

The Royal College of Ophthalmologists (RCOphth), MAC SOL evidence submission

Evidence submission document (unpublished) from the RCR in support of its application for inclusion on the MAC SOL.

Royal College of Physicians (RCP), 2011 and 2012/13 census summary sheets

The RCP's census of medical specialties. There is a report in the census for each specialty, containing workforce demographics, working patterns, geographical distribution, and a commentary.

RCP, Consultant physicians working with patients: The duties, responsibilities and practice of physicians in medicine

This publication provides information regarding specialty workforce requirements and job plans, patterns of clinical work and referral and standards of healthcare provision.

RCP, Future Hospital Commission full report

This report, published by the RCP, focuses on the care of acutely ill medical patients, the organisation of medical services, and the role of physicians and doctors in training across the medical specialties in England and Wales. Among the recommendations was an increased role for GIM doctors.

RCP, ST3 Fill rates survey

Data regarding fill rates, by specialty and region for the ST3 level training.

The Royal College of Physicians in Edinburgh (RCPE), Response to MAC survey 2014

Evidence submission from the RCPE, in support of the inclusion of acute medicine on the MAC SOL. Covering the UK and not just Scotland.

Royal College of Radiologists (RCR), Evidence Submission to CfWI including response to HEE's Workforce Planning 2014/15 Call for Evidence

Evidence submission document from the RCR in support of its application for inclusion on the MAC SOL.

RCR, Radiology in the UK – the case for a new service model

The RCR's proposal that existing radiology services should collaborate to form networks of expertise serving a population of several million rather than a few hundred thousand as at present.

South East London Doctors' Cooperative (SELDOC), Response to MAC survey

Evidence submission document from South East London Doctors' Cooperative (SELDOC) in support of the inclusion of general practice on the MAC SOL.

South Tees Hospitals NHS Foundation Trust, Response to MAC survey

Evidence submission document from South Tees Hospitals NHS Foundation Trust in support of the inclusion of emergency medicine, acute medicine and others on the MAC SOL.

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Migration Advisory Committee (2012) *Tier 2 Shortage Occupation List 2014*. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/308513/shortageoccupationlistapril14.pdf [Accessed June 2014].

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Migration Advisory Committee (MAC) (2014). *Call for Evidence: Partial review of the Shortage Occupation Lists for the UK and Scotland*. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/359315/Call_for_evidence_FINAL.pdf [Accessed September 2014].

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