Report on the contribution of EEA and other overseas workers to the UK Medical Physics and Clinical Engineering Workforce

Executive Summary

The UK's withdrawal from the EU's Free Movement will critically threaten the Medical Physics workforce, which is already suffering from a shortage of staff.
Science crosses borders and in order for the UK to remain at the forefront of science and scientific practice in medicine it is essential that the workforce has continued access and encouragement to recruit the brightest and the best from across the world. This document reports on IPEM's survey conducted in 2017, into the potential impact of the UK's withdrawal from the EU and associated free movement on the medical physics workforce. There was a 55% response rate to this survey, which covers approximately 70% of the Medical Physics and Clinical Engineering workforce in healthcare settings. Data from workforce surveys in 2014 and 2015 are also included.

- Radiotherapy Physics vacancy rate of 9%
- Clinical Engineering vacancy rate 5 % and Rehabilitation Engineering vacancy rate 10%
- EEA free movement and qualification recognition critical to workforce provision.
- Tier 2 visa process protracted and difficult to navigate
- Cross-fertilisation of ideas and diversity of both thought and training are key to maintaining scientific excellence
- Recruitment and retention of the brightest and best essentially to maintain the UK's position at the forefront of scientific research and development

Background

In September and October 2017, IPEM conducted a survey in order to acquire data on the number of EU and other overseas workers in the UK MPCE workforce, in order to assess the impact that changes in immigration law or social attitudes would have on the provision of MPCE services.

The survey asked each MPCE service provider how many staff in total, and how many of the total were from the EEA (excluding the Republic of Ireland) and Rest of World for each area of work.

Areas of work were defined as Radiotherapy Physics, Diagnostic Radiology/Radiation Protection, MR Physics, Non-ionising Radiation, Nuclear Medicine, Rehabilitation Engineering, Physiological Measurement and Clinical Engineering.

An invitation to respond to the survey was sent to all Heads of a Medical Physics or Clinical Engineering service in the UK, who were members of IPEM at the time of the survey. The decision was taken to restrict the survey to Heads of Service who are IPEM members

because the survey also sought views and experiences on recruiting from overseas in order to form IPEM's response to the MAC's Call for Evidence.

There has been a shortfall in the workforce in all medical physics specialities for many years with the most recent surveys showing vacancy rates of 9.0% in Radiotherapy Physics[iv] and 5.3% in Radiology Physics[i]. There is sufficient soft evidence that the situation in Nuclear Medicine Physics is comparable to that in Radiotherapy Physics. Consequently the roles of both Scientist and Practitioner in both Radiotherapy Physics and Nuclear Medicine Physics are listed on the National Shortage Occupation List. The Occupation Codes under which these roles are listed are arguably not the most appropriate, with radiotherapy physics practitioner, radiotherapy physics scientist and nuclear medicine practitioner listed under "2217 Medical Radiographer" but at the time of listing, IPEM was advised that this would make no material difference. Nuclear medicine scientist is listed under 2219 "Health professionals not elsewhere classified" which would be more appropriate for all MPCE occupations.

While Clinical Engineering, Rehabilitation Engineering, Radiation Protection Physics , Diagnostic Radiology Physics and Radiation Engineering are not listed on the NSOL, there is a case for them to be included as shortage occupations, given the comparable vacancy rates and difficulties with training sufficient numbers for replacement. One criterion for listing is that roles can demonstrably be filled from overseas, and the data from this survey will fulfil that.
The NSOL facilitates access to a Tier 2 visa, both by eliminating the requirement for the Resident Labour Market Test and by allowing bespoke minimum salary requirements. In general, a tier 2 visa holder must earn £35,000 per annum after five years in order for that visa to be renewed. This is higher than the annual salary of many technologists.

Results of the Survey

EEA and Rest of World Workers in the MPCE Workforce

The survey identified that EEA workers form a significant portion of the UK Medical Physics workforce in healthcare settings. Over all specialities, some 17.8% of the medical physics work force in the UK comprises workers from overseas, and slightly over half (9.7%)*[ii] of these are from the EEA. In addition, between 5 and 10% of roles are unfilled, depending on specialty.

Without the ability to fill these roles from overseas, the shortage would be even more acute, and the ability to provide a safe service compromised. Staff are recruited both from the EEA and from the rest of the world and both contributions are highly valued. Members report that recruiting from the EEA is facilitated not only by the current freedom of movement with no visa requirement but also the EU equivalence of qualifications directive which allows qualified Clinical Scientists to register directly with the HCPC rather than register through the more lengthy International Equivalence route.

As well as filling vacancies in shortage occupations[iii] several heads of Medical Physics departments report that workers from the EEA are more motivated and are highly trained, with a complementary focus to their UK counterparts. Of particular note is the Portuguese nuclear medicine technologist training program.

> "The Portuguese trained technologists are not only better trained, they also have a better work ethos and a more scientific approach to the work." *Referring to nuclear medicine technologists*

The Clinical Engineering community has similar concerns (5% vacancy rate in Clinical Engineering and 10% in Rehabilitation Engineering), and so recruitment from overseas, both EEA and the rest of the world, is a critical route to filling vacancies. High vacancy rates, combined with a high number of posts filled by EEA and other overseas workers place this

workforce and delivery of services, essential to the health service, in a precarious position. In addition there is a higher percentage than average of this workforce approaching retirement.

> ***"We need as many options available to us as possible to recruit trained staff in the field of rehabilitation engineering. The majority of the workforce is close to retirement and many departments carry a significant number of vacancies for long periods due to the lack of employable candidates. This will only make an already difficult situation worse."***

Assessment of possible impact

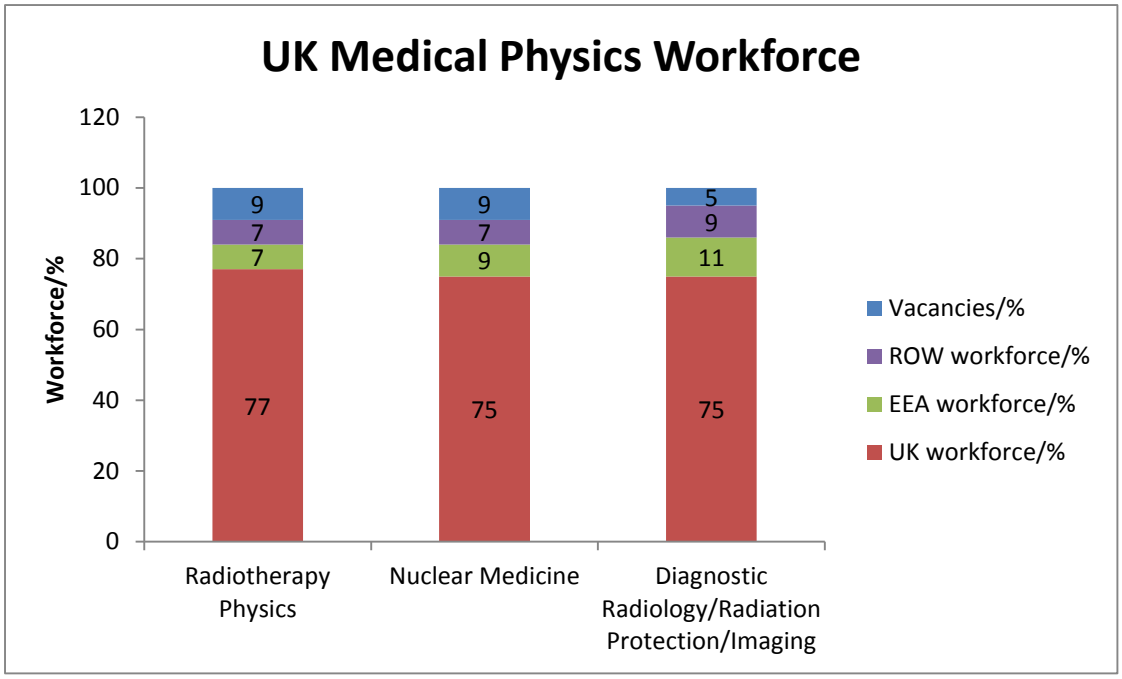
The medical physics and clinical engineering workforce already struggles to fill vacancies, and an IPEM study in 2015 demonstrated that, for radiotherapy physics, the current UK training schemes are not training sufficient individuals, neither for workforce replacement nor to close the gap[iv]. Furthermore the training capacity is limited, and is unlikely to, in the short term, expand sufficiently to fill the need. A similar study, in 2015 of the rehabilitation engineering workforce, suggested likewise, with severely limited options for training the required technologist workforce. A reduction of either EEA or rest of world migrants would result in a critical shortage in the medical physics workforce, unless balanced by an equal number of migrants from the other source.

A reduction in workers from the EEA would impact significant on the UKs ability to deliver a safe, world class medical service in the areas of imaging, radiotherapy and nuclear medicine. A reduction or restriction in immigration from the rest of the world would have a similarly detrimental effect. With a carefully planned and adequately funded training programme it may be possible to make up the numbers shortfall. However, IPEM's projections for radiotherapy physics predict a gap of 10-15 years before such trainees recruited can exit, and training capacity has expanded sufficiently to meet demand. Leaving numbers aside, the UK science community benefits significantly from experience of best practice, and talent obtained from across the whole world. This cannot be balanced by increased training provision in the UK.

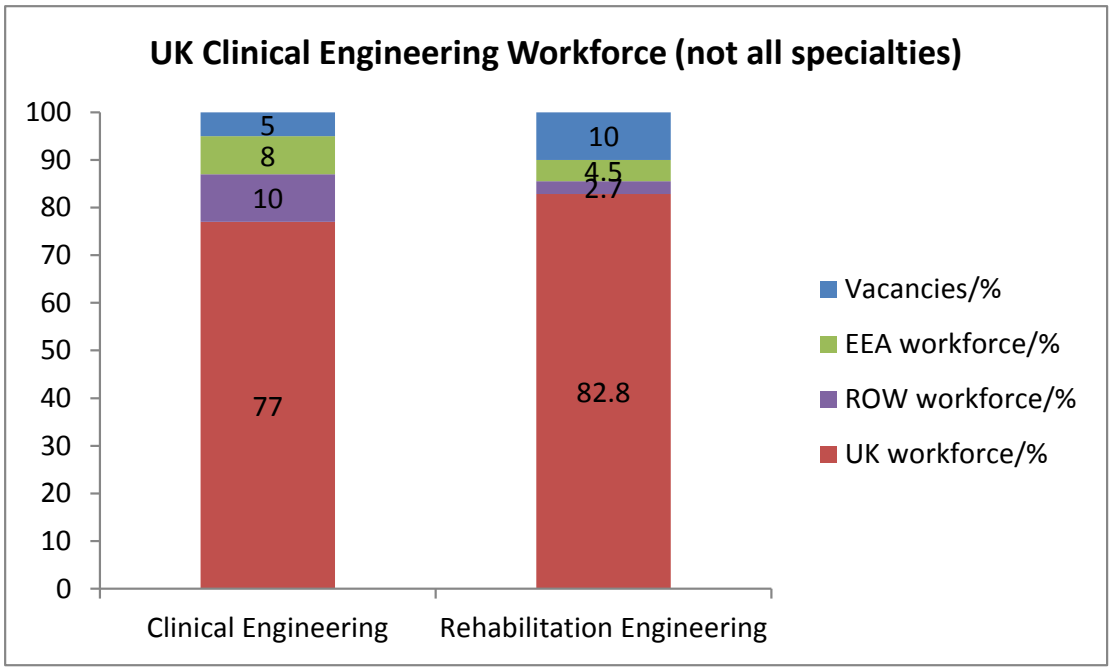
> ***"The EEA currently provides an appropriate framework to staff our radiotherapy services in safe manner; I'm concerned that the UK's withdrawal from the EU will impact the ability to attract, recruit and retain experienced candidates."***

The charts below illustrates the potential impact on the medical physics and clinical engineering profession involved in direct healthcare should these workers be lost.

Medical Physics Workforce



Clinical Engineering Workforce



There are two aspects of risk regarding workforce numbers, one is that the current overseas workforce, or a high proportion of them will leave, either because of difficulties in obtaining a visa or visa extension for themselves or their families, or because a change in societal attitudes mean that they no longer wish to remain in the UK. This change in societal attitudes may be real or perceived, but the effect is likely to be similar. Several responses expressed concern that this would happen. The other risk is that services will no longer be able to fill vacancies by recruiting those trained abroad from the EEA, and will instead have to utilise the more protracted Tier 2 visa and, where relevant, the international route to HCPC registration. For those specialties not listed on the National Shortage Occupation List this will make recruiting technologists/Practitioners particularly difficult. IPEM will take all opportunities to influence any restructuring of the visa/immigration system, and work towards additionally listing radiation engineering practitioners, clinical engineering practitioners and

diagnostic radiology/ radiation protection scientist and practitioner, should the migratory advisory committee open a further call to evidence.

Recruitment Practices, Training and Skills

Potential Clinical Scientists wishing to work in the UK must register with the Health and Care Professions Council (HCPC). Those who have have completed their training overseas must utilise a different route to those who qualified in the UK. For candidates from EEA countries this is facilitated by the mutual recognition of qualifications directives. Candidates from outside the EEA must utilise the international route to registration and this can be a protracted process, although it varies from individual to individual. As well as facilitating state registration with the HCPC, the mutual recognition of qualifications ensures that candidates are of the required educational standard

Recruitment from the EU and the wider EEA is greatly facilitated at present by free movement within the EEA, and eliminates the delay that a visa application takes. On average, recruiting from the EU is a quicker process, than recruiting from the rest of the world, with recruits taking up their posts, on average, within six months.

Recruitment from outside the EEA is, under the present system, complicated and time consuming. It should be noted, however that the experience of recruiting from abroad varies considerably, with some experiencing very little friction in the Tier 2 visa process, and other being unable to utilise the NSOL exemptions because of minor discrepancies between the job descriptions and the NSOL roles, owing to the arguably incorrect Occupation Code. For recruits from the rest of the world taking up a Clinical Scientist role, who must register with the HCPC as a legal and role requirement, this increases the length of time taken for recruitment significantly, with several recruiters finding that the overall process takes over six months.

No respondents who have been involved in recruitment from overseas (50% of those with overseas workers) reported using different methods of shortlisting for UK or overseas workers from either the EEA or the rest of the world. Once shortlisted, some employers utilise video links for interviews, while other employers do not allow this. One respondent has had a negative experience while interviewing via video link, and no longer offers this. Not infrequently this results in overseas applicants declining an interview as they are unable or unwilling to travel, although experiences vary. Additionally one respondent commented that recruitment from overseas and outside the EEA increased the burden on recruiters to ensure qualification content and level is appropriate.

If free movement from the EEA, with the associated advantages of ease of recruitment, is to end, the process would need to be significantly streamlined with responses given in a more timely manner if the stability of the workforce and scientific excellence is to be maintained.

In small departments one vacant post represents a significant proportion of the workforce and so the bureaucratic difficulties, and timescales involved in recruiting from the rest of the world via Tier 2 visa make this route, in its current form, an unattractive option for meeting the workforce shortfall. This is especially true for technologist posts given that many do not meet the salary requirements for a Tier 2 visa in the absence of an NSOL exemption. Several recruiters have experienced the situation in which procuring a visa for their selected worker took so long that the worker found work elsewhere.

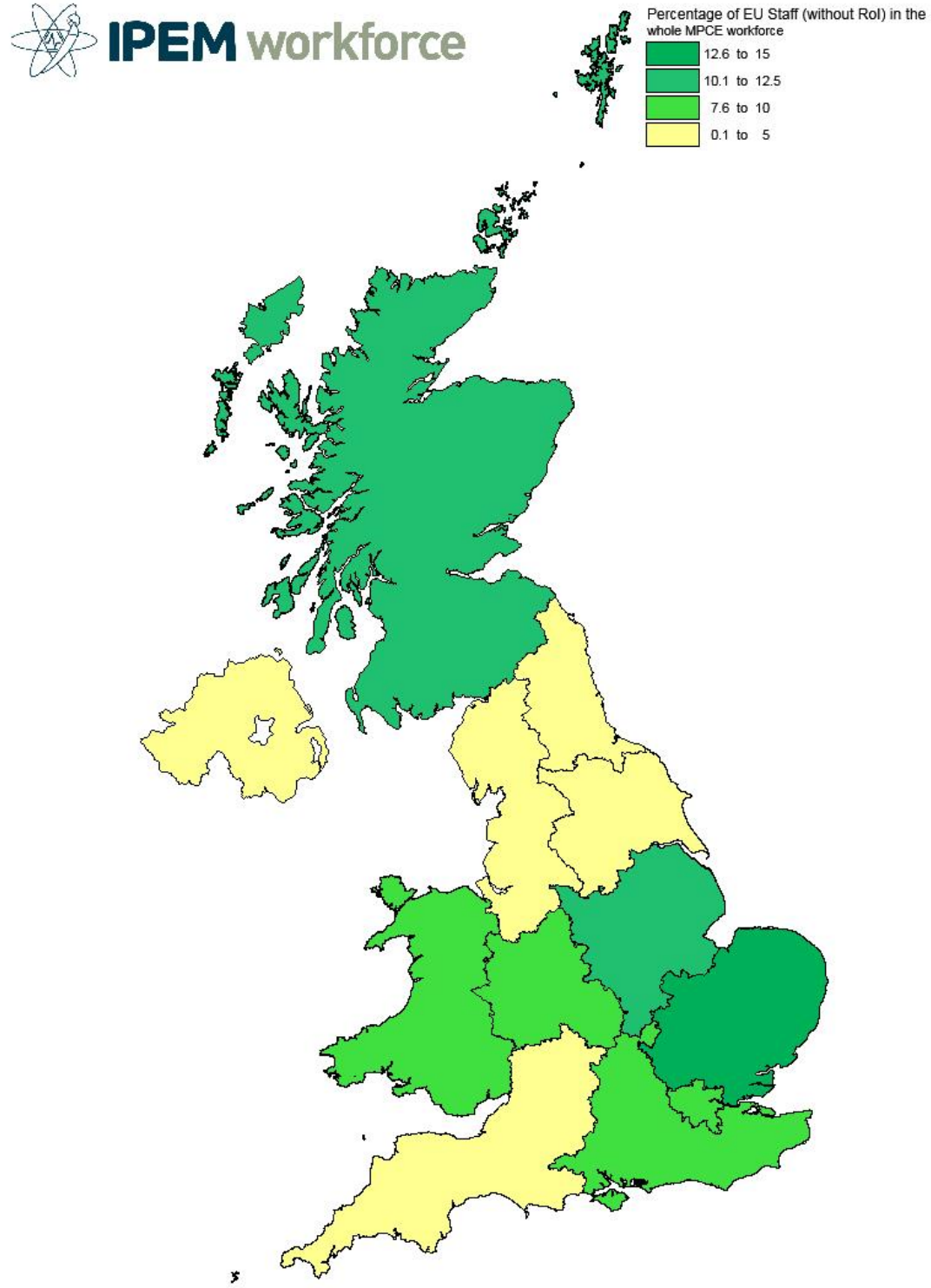
History of recruitment from overseas

IPEM does not have any data regarding EEA migration in the past from which to draw a comparison. Heads of department report regularly receiving applications from EEA applicants over the past five years, and a small number report that by comparison, none have been received in the 17 months since the EU referendum.

Geographical Variation

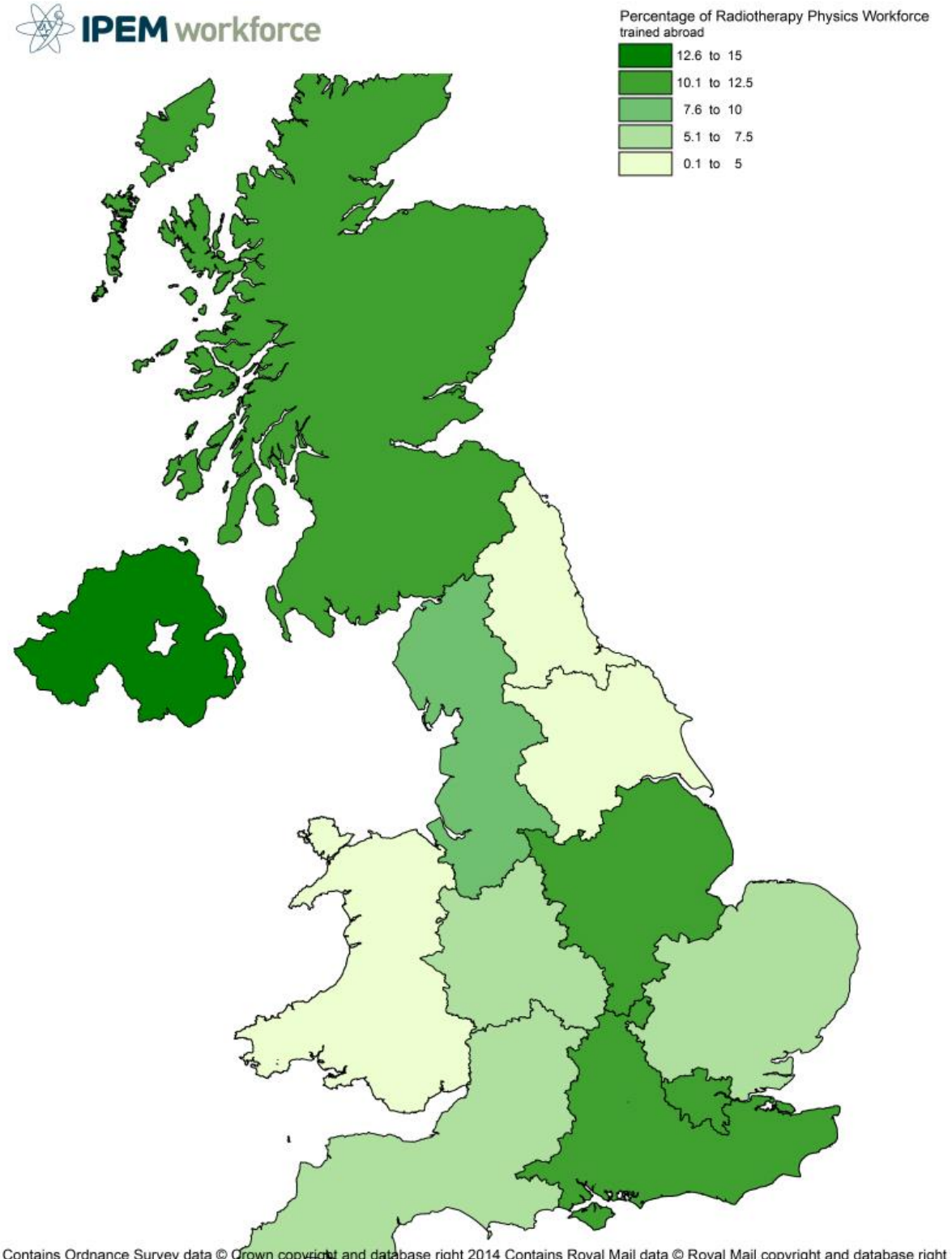
The survey identifying significant geographical variation in the contribution of EU staff to the MPCE workforce: as illustrated by the maps below.

The first illustrates the percentage of EU (excluding those from the Republic of Ireland) workers in each area of the country, as identified in the survey. This is over 10% in Scotland, Midlands, London and East Anglia, and only below 5% in Northern Ireland, the North West, North East, Yorkshire and Humberside and the South West. This effectively represents the potential instability in the workforce should these EU workers be unable to or choose not to stay in the UK post Brexit.



The second map shows the percentage of **radiotherapy physics** (only, not other specialties) workers who were trained abroad. This shows the extent to which different regions rely on the ability to fill vacant positions with those trained abroad. There is sufficient data for this analysis on the radiotherapy physics workforce, but not for others. It is evident that the distribution is different, with Northern Ireland relying heavily on radiotherapy physics staff recruited from abroad, along with Scotland, London, the South East, and to a less

extent, the Midlands. This data is not differentiated by EEA or the ROW, so the apparent discrepancy in the data for Northern Ireland is due to a high number of radiotherapy physics scientists from outside of the EEA.



Advantages and disadvantages of employing EEA workers.

Some 92% of respondents to IPEM's survey, all of whom recruit, value the ability to recruit from overseas, and find it an advantage to be able to do so with ease. Only 3.5% have experienced management or other difficulties with a diverse workforce and prefer to recruit from the UK. The remaining respondents were neutral with either having no experience or noting that it was important to introduce diversity from all routes.

"I always want to recruit the best person for the job, irrespective of nationality."

"We also find that the different educational backgrounds and clinical experience enable shared learning of best practise from around the world."

For both Medical Physics and the Clinical Engineering workforces the major benefit is to fill vacancies with high quality staff that are not being trained in the UK. There are however there are a wealth of other benefits to recruiting EEA and other overseas migrants in the form of the scientific advantages that exposure to different experience and practices brings. A workforce recruited from a wide range of backgrounds and experience benefits from varying scientific input, alternative experience and practice, and consequently cross-fertilisation of ideas. This leads to enhancement of practice, higher overall scientific standards and a greater quality of science (41% of physics respondents). In addition, several senior IPEM members reported that they value cultural diversity in a workforce which serves a diverse population; this is particularly important for the public-facing roles in nuclear medicine. Other members report that, in particular, EEA workers are better trained and motivated than UK workers (17%, rising to 39% for nuclear medicine).

It is likely that the ease of EEA migration has masked the shortage of Clinical Scientists and technologists in the UK, by providing a source from whom to make up the shortfall. An example of this in nuclear medicine, where for some years the UK has been unable to train enough technologists, and the Practitioner Training Programme has yet to develop sufficiently to train significant numbers. There is a very good nuclear medicine technologist training program in Portugal, and many nuclear medicine departments in the UK have benefitted from this. In radiotherapy, despite training Clinical Scientists at close to the capacity of training departments under the current training scheme, there is still a significant shortfall. The situation in nuclear medicine and radiation physics is similar: given the vacancy rates it is unlikely that recruitment from overseas has impacted negatively on training programs since more trained workers are still needed.

The Practitioner Training Programme is failing to deliver the required number of technologists, and while there are other training schemes in Scotland and Wales these are aimed at meeting the needs of the workforce locally. IPEM also deliver a Technologist Training Scheme but without adequate funding to recruit to training posts or to release senior professionals for assessment duties, the throughput is limited. Prior to the EU referendum, individual Trusts or Health Boards may have been reluctant to release funds for training, if staffing needs can be met from EEA and the rest of the world, but we have no evidence to confirm or refute this. The introduction of the Apprenticeship levy may go someway towards improving this, provided that funds are directed towards medical physics and clinical engineering.

Scientific Excellence

The majority of respondents agree that the ability to recruit the brightest and best from the whole world, together with a reputation for pursuing scientific excellence, is a huge benefit for driving quality in services. Collaboration, research and trials will all suffer detriment as a direct consequence if immigration is to be curtailed amongst this workforce, or if the UK is perceived as an undesirable location. This includes social attitudes; if these individuals do not feel welcome, then talented scientists will be lost to other countries.

"I agree that a diverse workforce is essential to providing quality services because innovation flows out of diversity."

"We have also had [UK} staff able to go and work [temporarily] at other overseas departments which is also very valuable."

The benefit to the UK of Medical Physics and Clinical Engineering migrants cannot be measured by the salary paid to them; indeed that of many technologists does not meet the minimum required for a Tier 2 visa. It has been suggested that the nuclear medicine workforce in particular has benefitted from a rise in standards as staff from the EEA are with a complementary focus to that in the UK.

There is a societal benefit of delivering a world class health service, drawing best practice from the entire world, including the EEA, with the UK continuing to be at the forefront of scientific development and research.

Dr Jemimah Eve, Workforce Intelligence Manager

[i] IPEM Workforce Survey 2014. 25% response rate
[ii] IPEM survey 2017, 55% response rate, capturing approximately 70% of the workforce
[iii] Radiotherapy Physicist, Scientist and Practitioner, Nuclear Medicine Physicist, Scientist and Practitioner are listed on the National Shortage Occupation List
[iv] IPEM Position Statement on the Radiotherapy Physics Workforce, 2015