Northern Ireland

Medical School Places Review 2018

Review of the Annual Number of Medical School Places needed in Northern Ireland

Index

Foreword

This Review of the Medical School Places in Northern Ireland is one of the early actions of the HSC Workforce Strategy: *Delivering for our people* and was commissioned by the Department of Health (DoH) prior to publication of *Delivering for our people* in May 2018.

The aim of the review was to determine "the optimum number of medical student places that NI requires per year to meet the medical component for delivery of healthcare in NI".

The Terms of Reference for the Review (Appendix 1) and the Membership of the Review Steering Group (Appendix 2) were agreed during the autumn of 2017 and the work of the Group was undertaken between December 2017 and June 2018 (Appendix 2).

The approach to this Review has been to obtain data from a wide range of sources, consult extensively with stakeholders (Appendix 3), sense-check the data and findings from consultations with the Steering Group at scheduled meetings and come to conclusions and recommendations based on the best available evidence and advice.

Sources of Data
Central Applications Office, Ireland
Deloitte Time to Care
Department of Health (DoH)
General Medical Council (GMC)
Health and Social Care Trusts (HSC Trusts)
Health and Social Care Pension Service
NI Medical and Dental Training Agency (NIMDTA)
NI Statistic and Research Agency (NISRA)
Public Health Agency Workforce Planning
Queen's University Belfast (QUB)
Royal College of Physicians
Student Loans Company
Universities and Colleges Admissions Service (UCAS)
UK Foundation Programme Office,
UK Medical Education Database – UKMED

I would like to formally record my gratitude to the many organisations and individuals both inside and outside Health and Social Care NI who have been willing to engage with this Review, to provide data and to share confidential and pre-publication information. In this regard, I particularly want to acknowledge the assistance of Mr Alan Walker (Head, NI Office, GMC), Professor Pascal McKeown (Acting Head of School of Medicine, Dentistry and Biomedical Sciences, QUB), the HR Directors and their teams in the HSC Trusts, and Ms Alison Dunwoody (DoH Information and Analysis).

Lastly, I want to thank all the members of the Steering Group for their advice and support during the conduct of the Review and especially Dr Gillian Rankin, Ms Alison Dunwoody, Ms Denise Hughes and Mr Peter Barbour as members of the Core Group, Mr Robert Cranston for providing the secretariat for the Review and Mr Andrew Dawson for the invitation to conduct the Review. Thank you also to the members of the Steering Group for their helpful comments and suggestions on the June report.

Professor Keith Gardiner
Chair of the Medical School Places Review
29 August 2018

Part A - Summary, Key Findings and Recommendations

In March 2018, there were 6096 GMC-registered doctors with a licence to practise living in NI with a 50:50 split between males and females (GMC data explorer 2018). In addition there were 240 provisionally registered doctors on NIMDTA's Foundation Programme making a total of 6336 doctors available to work. GMC Revalidation Data shows that there are 5898 doctors connected to a designated body in NI, in addition to the 240 provisionally registered doctors who do not have that connection and 276 doctors with a NI address who are connected to a locum agency (total 6414). Of the 6096 GMC-registered doctors with a licence to practise, 588 were non-consultant non-training doctors (9.6%), 1808 were trainees (29.7%), 1731 were General Practitioners (GPs)(28.4%) and 1969 were specialists (32.3%). Some of these doctors who are registered with the GMC using a NI address may not be working in NI.

HSC data from 2017 shows 5579 doctors employed in the HSC or working in NI as GPs of which 23% are GPs, 31% are specialists, 13% are non-consultant non-training doctors and 33% are trainees. The HSC data does not include those who are employed in the HSC through locum agencies, doctors who are employed by QUB, by other parts of the public sector (Department of Justice, Police Service NI) or those working exclusively in the private sector. HSC data shows that females make up 51% GPs, 37% specialists, 64% non-consultant non-training doctors and 58% trainees.

Overall there has been a progressive rise in the number of GMC-registered doctors with a licence to practise living in NI increasing from 5880 to 6142 between 2012 and 2017 (State of Medical Education and Practice - SOMEP). The number of male GMC-registered doctors with a licence to practise has been relatively static (1.6% reduction between 2012 and 2017); whereas the numbers of female doctors with a licence to practise has been rising (11.2% rise between 2012 and 2017)(SOMEP). GMC SOMEP data indicates a decline in the number of male doctors on the GP register between 2012 and 2017 of 10.8% and an increase in the number of female doctors of 17.4% over the same time period.

HSC data shows that the medical workforce has increased in size from 4924 to 5579 between 2012 and 2017. Over this period, the number of male doctors increased by 6% (from 2597 to 2757) and the number of female doctors increased by 21.3% (from 2327 to 2822). These increases in the number of male and female doctors have been in non-consultant non-training posts, training posts and in specialist (consultant) posts. There is a markedly different pattern in the GP workforce with a decline in the number of male GPs (4%) and an increase in the number of female GPs (29.8%) over this same 5-year time period. Overall between 2000 and 2017, the proportion of female doctors has risen in all groups in NI – from 32% to 51% in GPs, 21% to 37% in specialists, 55% to 64% in Non-Consultant Career Grades (NCCGs) and 41% to 58% for trainees.

Footnote: *As indicated in the foreword, a number of different sources have been accessed to obtain the data regarding the medical workforce in NI referred to in this report. The data gathered from different organisations are not identical as the information has been collected for a variety of purposes by these bodies over different time periods.*

Key Finding 1

The medical workforce in NI is changing, with an increasing proportion of female doctors in all groups of medical staff. There has been a decline in the number of male GPs.

85% of doctors working in NI graduated from a UK medical school – which is a higher proportion than is seen in Scotland, England or Wales. This proportion increases to 92% doctors when graduates from Irish medical schools are included. A relatively small number of registered and licensed doctors living in NI graduated from continental Europe (2.5%) or other countries (5.5%). The number of licensed doctors of international domicile living in NI is declining. Of the EU doctors, 33.7% are on the GP Register, 40.9% are on the Specialist Register, 14.8% on neither the GP nor Specialist Register and 10.7% are in training. Of the International Medical Graduates (IMG), 4.5% are on the GP register, 40.5% on the Specialist Register, 44.5% on neither Register and 10.5% are in training. Of those doctors registered with a licence to practise living in NI, 74.7% of trainees, 73.9% GPs; 67% of Specialists and 57.7% of NCCGs graduated from QUB.

Key Finding 2

NI is very dependent on UK and Ireland medical graduates and in particular QUB graduates, for its medical workforce. This dependence is increasing with a reducing number of IMGs and EEA doctors in NI.

There has been a large increase in the number of specialists working in the HSC rising from 890 to 1736 between 2000 and 2017. In May 2018, the number of specialists working in the HSC was 1800 with 108 vacancies – a total of 1908 posts. The number of NCCGs has risen from 433 to 707 in 2018 (HSC data). Currently there are estimated to be 67 vacancies in NCCG posts in NI. The HSC has been undertaking an International Medical Recruitment drive over the last 2 years with the aim of recruiting 83 specialists and 118 NCCGs. There has been a smaller increase in the number of GPs between 2000 and 2017 (1058 to 1297)(HSC data). A shortfall in the GP workforce in NI is evidenced by difficulty or inability in filling locum sessions, out of hours' shifts and to recruit to salaried and principal positions in GP (particularly in rural areas).

Key Finding 3

Despite an increase in the number of GPs, NCCGs and specialists working in NI over the last 17 years, there remains a shortage of doctors working in permanent positions as GPs, NCCGs and specialists in NI. This has necessitated an International Medical Recruitment Drive which started in 2016 and is still continuing.

In 2005, the DoH commissioned an additional 96 medical students places at Queen's University Belfast (QUB) increasing the annual intake to 250. In 2011, the posts funded by DoH were reduced to 236 due to concerns, across the UK, about a possible oversupply of doctors. Currently there are 271 students admitted to study medicine at QUB each year. 236 places for students from the UK and EU, 26 for international students and on average 9 for students from the International Medical University in Malaysia (entering at 3rd year).

There has been a decline in the number of 18 year olds entering medicine at QUB, with an increase in the number who are 21 or 22 years old. This is in keeping with the percentage of students (22 - 28%) who are entering QUB Medical School already having completed an undergraduate degree.

Entrants to QUB Medical School vary between 55 to 68% female and reflect the gender distribution of the applicants. There is a low attrition rate at the QUB medical school (4%), though more students are taking six years rather than five to complete their medical course as a result of an increasing number undertaking intercalated degrees.

Key Finding 4

There is an increasing proportion of students entering the QUB medical school already with an undergraduate degree (27%) and an increasing proportion undertaking an intercalated degree (31%).

After graduating in medicine, medical graduates who wish to work in the UK enter the Foundation Programme. Of the NI domiciles who attend the QUB Medical School, 86% enter the NI Foundation School, compared with 42% GB domiciles and 33% International domiciles. Of the NI domiciles who attend a Great Britain (GB) medical school, 75% remain in GB for the Foundation Programme and 25% return to NI for Foundation training.

Key Finding 5

There is a differential pattern of behaviour with regard to location of Foundation training, domicile and medical school of the graduate.

There is a low attrition rate for the NI Foundation School (2% during F1 and 3.6% during F2). There is an increasing number of doctors who take a break following the completion of the Foundation Programme in the UK. The proportion of doctors completing the Foundation Programme in NI and entering directly into GP or specialty training has fallen progressively from 68.4% in 2012 to 34% in 2017. A similar pattern is observed in the rest of the UK but to a lesser extent (UK-wide fall from 65.8% to 40.5%). Three years after completion of the Foundation Programme, 93.8% doctors who finished Foundation in 2013 had entered GP/specialty training; this has fallen to 79.3% for those finishing Foundation in 2015. More male than female doctors take a break from training after completing Foundation in NI though the numbers doing so continue to increase from both genders. The reasons doctors give for taking a break in training include health and wellbeing (48.5%), career decision (32%), desire for different working environment (26%), personal circumstances (12%), personal development (8%) or lack of success at entering training (22%). Among health and wellbeing issues, trainees report feeling undervalued and disillusioned, and within the desire for a different working environment trainees have described negative experiences of training and struggling with the rigidity of training structures.

Of NI domiciles who complete Foundation in NI and enter specialty training, 95-97% stay in NI for that training compared with 75-81% of non-NI domiciles who complete Foundation in NI.

Key Finding 6

There has been a significant change in the behaviour of doctors after completion of the Foundation Programme over the last 5 years, with the majority now not entering GP or specialty training immediately. There is a differential pattern of behaviour with regard to location of specialty training and domicile of the Foundation doctor.

HSC data has shown that the number of trainees in NI has risen from 1294 to 1839 between 2000 and 2017.

In response to the shortages in specialists and GPs described above, HSC Workforce Planning has recommended an increase in training posts in GP and across a range of hospital-based specialties. As a consequence an additional 82 specialty and GP training posts have been created between 2015 and 2018. A further expansion of 26 posts is planned for August 2018.

However, the number of specialty and GP training posts filled each year in NI has remained steady at an average of 374 (range 355-390). As part of this expansion, there has been an increase in the number of GP training posts from 65 posts/year to 85/year in August 2016, 97/year in August 2017 and targeted for 111/year in August 2018. Over this period the number of GP training posts filled from Round 1 recruitment has risen to a mean of 82 (range 80-85).

Currently there are 202 vacancies in NI medical training programmes (10% total posts). The number of vacancies in NI training programmes has increased sharply over the last 5 years (from 83 in August 2013 to 202 in February 2018).

Key Finding 7

The increase in the number of funded training places in NI has not resulted in any overall increase in the filling of training posts but rather has increased the number of vacancies in the training programmes. Whilst there has been an increase in the number of filled GP training places, it has not as yet been possible to fill all of the increased number of funded GP training posts. There has also been an increase in the number of vacancies in other training programmes. This suggests that a strategy of further increasing the total number of funded training places, on its own, is very unlikely to achieve the desired workforce planning aim of increasing the number of doctors achieving a Certificate of Completion of Training (CCT) as a GP or as a specialist.

The ever increasing demands on primary care and on hospital services in NI have been described in detail in **Systems, not Structures** the report of the Expert Panel on the configuration of Health and Social Care Services in NI.

The number of people in NI who are aged over 65 years grew by nearly 70,000 during the 25 years between 1991 and 2016 and is projected to grow by a further 77,600 between 2016 and 2026. The NI Statistics and Research Agency (NISRA) has projected that the number of people in NI who are over 85 will increase from 36,500 in 2016 to 47,900 in 2026 (31% increase). This growth in the population of over 65s and in particular of over 85s, will be associated with an increase in the number of patients with chronic conditions and multiple chronic conditions, the number of patients having hospital admissions and spending on health.

The number of specialists employed in the HSC has increased at a rate of 3.9%/year over the last 10 years. Estimations from the HSC Workforce Planning project for selected hospital-based specialties has indicated that there is a need to increase the number of specialists in those specialties by 38% by 2026. These workforce plans were completed between 2014 and 2018 – taking 2016 as the mid-

point this would be a rise of 38% over 10 years. Therefore it is predicted that there will be a continuing increase in the number of specialists of approx. 3.8% per year until 2026 in NI.

The number of NCCGs working in the HSC has increased from 572 to 682 between 2007 and 2017. Recently the number of NCCG vacancies in the HSC has been in the range of 61 to 118 and the 2017 GMC register indicates that there were in the region of 881 NCCG doctors with an address in NI. Therefore it has been estimated that the need for NCCGs is currently 800. This is an increase of 228 doctors over an 11 year period from 2007 at a rate of 3.5%/year.

It could be predicted that the need to increase the number of GPs will be in line with the rate at which the number of specialists and NCCGs is increasing especially in view of the changing demographics of the population and the plans to provide increasingly more care in the community.

Key Finding 8

Increases in the incidence of obesity, diabetes and chronic conditions, as well as the predicted demographic changes with a rapid rise in the size of the population who are over 65 and over 85 in NI will result in an upsurge in the need for medical input from GPs and hospital doctors. It is predicted that this will result in a requirement to continue to increase the number of specialists at approx. 3.8-4% per year with an associated increase in the number of GPs and NCCGs at a very similar rate (3.5-4%/year).

There are a number of approaches that could be taken to address the current shortfall in the medical workforce in NI and the predicted increasing need over the next 8 years as a result of changes in the incidence of disease and in the demography of the population. These approaches include addressing the inflow, outflow, distribution and efficiency of the medical workforce.

This Review is focused on whether there is a need to increase the number of funded medical school places in NI. However, any decision to commission additional funded medical school places could not be enacted for additional entry until September 2019 at the earliest and more likely September 2020. With a medical school course of 4-5 years, 2 years of foundation and 3-8 years of GP/specialty training, any doctors who would be emerging with a CCT would not be arriving into the workforce until at least 2029 for GPs and until at least 2037 for specialties such as surgery.

GMC data from across the UK has shown that doctors are taking on average 6 years to reach the end of ST3 (3rd year of specialty training when GP training completes) - rather than the minimum of 5 years and trainees could take 12 years or more to reach CCT after registration in 8-year specialty programmes. In NI, trainees are taking a mean of 6.2 years post registration to achieve a CCT in GP, 9.7- 11 years in most hospital-based specialty programmes and a mean of 12.5 years post-registration for surgical specialties.

Key Finding 9

Increasing the number of funded medical school places will not have an impact on the number of fully trained doctors available to apply for GP posts for approximately 9 years (ie 2029 assuming any increase in medical school places is agreed in time for a September 2020 start) and to apply for specialist posts for approximately 16 years (ie 2036) though there may be some impact in psychiatry,

clinical radiology and anaesthesia from 2034. Therefore an increase in medical school places will not address the current shortfall in GPs, NCCGs and Specialists and these doctors will not be in place in time to meet the increasing service demand expected in the years leading up to 2026.

Recommendation 1
The DoH should not rely on increasing the number of medical school places in NI as the only mechanism to deal with the shortfall in the medical contribution to the workforce in NI. Other options that should be considered include attracting NI Domiciles working in the rest of the UK back to NI to work in the HSC; increasing the attractiveness of NI to doctors who are GB, EEA or international domiciles; improving the retention of medical staff; and attracting back into the HSC doctors who are undertaking locums, career breaks or who have retired early.

As the impact of any additional funding of medical school places will not occur until between 2029 and 2036, it is proposed that predictions of the doctors needed should be carried out for the mid-point of that time-period eg 2033 rather than for 2026.

The current number of specialists (permanent, temporary and vacancies) needed in NI is 1908.

The age at which doctors have been reaching completion of their training in a specialty and taking up a post as a specialist has been reasonably steady over the last 23 years. In 1995-6, the average age of appointment to consultant status was 37, in 2003-4 it was 35.6 and in 2017 it was 35.5 years.

The average age at which consultants have been retiring between 2008 and 2018 has been 59.79 (rounded up to 60) years. The median duration that consultants have been working before leaving the service is 23.3 years. It is unclear as yet whether the age at which doctors retire in NI will be impacted as a result of changes to the HSC pension scheme.

Therefore, if there was a steady number of consultants needed (1908) and each consultant worked 23.3 years, then the number of doctors in NI that would need to complete their specialty training each year would be 81.88 (ie 82). The average number of doctors acquiring a CCT in NI over the last 4 years has been 86. Therefore currently the output of NI training programmes should be just meeting demand. However, not all doctors who acquire a CCT through a NI training programme will stay in NI and doctors who have acquired a CCT elsewhere in the UK or indeed the equivalent in Europe could apply for a specialist position in NI. The rate at which specialists are leaving the HSC has been between 62 and 71 doctors/year with an average of 66.8.

Key Finding 10
Doctors are being appointed as specialists in NI between the ages of 35.5 and 37 years old, are working a median of 23.3 years and are retiring at a mean age of 59.8 years old. If NI was to be entirely self-sufficient in training specialists to work in NI and could retain all the specialists it trains in NI, then there would need to be a CCT output of at least 81.8/year to sustain the number of specialists at the current level of need at 1908.

If the rate of growth in the need for specialists in NI remains in the region of 3.8% per year until 2026, then the number of specialists needed in 2026 would be 2488. If it is assumed that the age at appointment as a consultant, duration of working life as a specialist and the age of retirement stays the same, then the number of doctors obtaining a CCT in a specialty would need to increase to 106.8/year.

Key Finding 11

The annual need of the HSC to appoint doctors with a CCT in a specialty will rise to 106.8/year by 2026 which will considerably exceed the rate at which doctors are currently completing a CCT in NI at 86/year. The funding of additional training places in NI over the last 4 years has not resulted in an overall increase in doctors entering post-Foundation training programmes in NI. Therefore further expanding the number of training places alone will not address this shortfall and an expanding gap between the supply and the need for specialists will develop.

If the rate of growth of specialists in NI remains in the region of 3.8% per year until 2033, an additional 1087 specialists would be needed in 2033 (total 2995). In the absence of contradictory data and assuming that the age of appointment, duration of working life as a specialist and age of retirement will remain the same, then the number of doctors obtaining a CCT in a specialty would need to increase to 128.5/year.

Key Finding 12

The annual need of the HSC to appoint doctors with a CCT in a specialty will rise to 128.5/year by 2033. This is a 50% increase in the numbers of specialists needed per year compared to the present rate of doctors acquiring a CCT in a specialty in NI each year. The gap between supply and demand of specialists will grow rapidly.

If a similar approach is used with regard to NCCGs, with an expected growth in numbers from the current estimated need of 800 at a rate of 3.5% per year until 2033, then the number of NCCGs needed in 2033 would be an additional 420 doctors (total 1220). The median duration that NCCGs work until retirement in NI is 19 years. Therefore the need is for 64 doctors to enter that grade each year in NI. This may be an underestimate as currently between 42 and 78 NCCGs (mean 52.7) are leaving the HSC each year.

Not all doctors who enter a training programme will continue in that training programme until completion. Doctors may leave a programme due to a decision to change to a different training programme, for family or personal reasons, due to failure to progress including examination difficulties, a desire to travel or work overseas or as a result of disillusionment with medicine. Many of these doctors will take up a NCCG post.

The attrition rate varies between programmes being very low in GP at 1.8%, 7% in Clinical Radiology, 35% in surgery, 39% in core medicine, 35% in Acute Care Common Stem- Emergency Medicine and 29-30% in anaesthetics, psychiatry, paediatrics and obstetrics and gynaecology programmes in NI.

Between 2012 and 2015, 112-128 trainees entered into run-through or higher specialty training in NI (mean 120.5). On average as described above 86 doctors achieved CCT/year in a specialty.

Therefore the estimated conversion rate of entrants to a hospital-based specialty programme is 86/120.5 or 71%. This triangulates with the NIMDTA data above.

It is not known why there is such a marked difference in attrition rate between different postgraduate training programmes but factors that may have relevance include the duration of the programme (GP is 3 years; Clinical Radiology is 5 years), one-to-one supervision (GP), full-day study leave release facilitated every week (GP), limited out of hours commitment (GP- 72 hours/year when in a GP practice), supernumerary to service provision (GP), and high competition rate (GP – until 2016 when the number of training posts was increased).

Key Finding 13

There is a variable attrition rate between different training programmes in NI with the attrition rate for GP training being very low. For most run-through or higher specialty training programmes in NI the attrition rate is 29-30% during the course of the programme.

Therefore if one accepts the attrition rate is on average 29% for NIMDTA hospital specialty training programmes, then to achieve an output of 128.5 CCT holders/year, 181 doctors need to enter higher or run-through specialty programmes each year in NI.

For GP trainees, the estimated need in 2018 is 111 training places/year. If that is projected forwards to 2033 with a growth rate of 3.5% per year, then the number of additional GP training places needed per year in 15 years' time would be 58 – a total of 169/year.

The attrition rate at medical school is of the order of 4% and in Foundation is 2% for F1 and 3.6% for F2 in NI.

There has usually been a Foundation School entry of 252 medical graduates into 252 Foundation posts in NI per year. On average 120.5 trainees went on to enter funded places on run-through or higher specialty training programmes between 2012 and 2015 with 65 entering the 65 funded GP training places available each year during the same time period. There is therefore a ratio of new entrants into funded GP and specialty training places/funded foundation places of 185.5/252 (73.6%) and a ratio of 185.5 new entrants into funded GP and specialty training places/236 funded medical school places (78.6%).

Key Finding 14

The percentage of doctors entering funded run-through GP/specialty or higher specialty training programmes in NI per year/funded medical school places in NI per year has been 78.6%.

To achieve 181 doctors entering run-through or higher specialty training each year and 169 entering GP training each year (a total of 350/year) in preparation for 2033, then it would be necessary to have 445 medical school places/year. This number of medical school entrants would provide a reserve of 95 doctors per year who would be on neither the GP nor the Specialist Register – of which the HSC would need 64 to become NCCGs each year. The Royal College of Physicians (RCP briefing paper – Double or quits) has estimated that to meet the current shortfall in physicians and to provide the additional physicians that would be needed to cope with the increased demands

associated with an ageing population and the chronic medical conditions associated with obesity, it will be necessary to double the number of medical school places in the UK to prepare for 2030.

Key Finding 15

If the requirement of the service for GPs, specialists and NCCGs (in response to increases in disease prevalence, patient expectations and the proportion of the population who are elderly) grows at the predicted rates of 3.5-3.8%/year; if the attrition rates at medical school, foundation school and GP/specialty programmes remain of the same order; and if the service continues to utilise doctors and manage their careers in the way that it currently does, then the number of funded medical school places in NI needs to rise from 236/year to 445/year to meet the needs of the population in 2033.

An increase in medical student numbers of this magnitude would raise issues about whether there would be:

- a sufficient number of applicants who would interested in applying to study medicine in NI and who would meet the criteria to be selected for medical school,
- capacity in the clinical academic community in NI to provide oversight and leadership for the expanded number of medical school places,
- capacity within the local education providers (GP practices and HSC trusts) to teach and supervise an increased number of medical students,
- capacity within GP practices and HSC Trusts to provide training opportunities for an increased number of Foundation, GP and specialty trainees and
- funding available to support the increase in the number of medical school, foundation, GP and specialty training places and to support the increase in medical school academic staff and postgraduate programme leaders and education management staff.

This Review has not examined the capacity in the clinical academic community for supervision and oversight, in local education providers for placements for additional medical students or additional trainees nor has it assessed the funding required to support an increase in medical school places.

It is expected that it will take some time and investment in clinical academic pathways to build capacity among the clinical academic community in NI. Funding is currently available for up to a total of eight posts for either Academic Clinical Fellows or Academic Clinical Lecturers within the NI Clinical Academic Training Programme. This equates to 4.4 posts per million population in NI. In comparison Scotland has 125 funded clinical academic training posts equating to 23 training posts per million and England and Wales have over 2000 training posts which is approximately 35 training posts per million population. There is currently a 22% vacancy rate among senior clinical academic positions in the QUB medical school. An increase in the number of funded academic training posts in NI is crucial to providing the pool of applicants for senior academic posts in NI that are necessary to enable a sustained expansion in the number of medical school places in NI.

It is anticipated that there will be a need to develop additional training capacity within primary care and the HSC Trusts to provide increased training opportunities for colleagues from other healthcare professions including nursing, pharmacy and Physician's Associates as well as for medical

professionals. Consideration therefore needs to be given to the overall teaching and training capacity in primary and secondary care in NI and whether this could be more efficiently utilised to facilitate an expansion in the number of funded medical school places without detrimentally affecting the quality of the teaching.

Recommendation 2

The Department of Health should increase funding for Clinical Academic Training Pathways in NI to facilitate an increase in the pool of applicants for senior clinical academic positions in NI and to enable an expansion in medical school places without compromising the quality of undergraduate medical education.

Recommendation 3

The Department of Health should commission an assessment of the teaching and training capacity in primary and secondary care for healthcare professionals in NI and develop a plan for how that teaching and training capacity can be maximised and utilised efficiently.

There are between 2460 and 3020 applications and between 490 and 660 applicants from a NI domicile background to study medicine in the UK each year. There has been a drop in the number of both applications and applicants from a NI domicile background between 2012/12 and 2017/18. This drop is seen to affect both first time applicants as well as re-appliers. There are approximately 701 applications and 164 applicants from NI domiciles to study medicine in Ireland each year – with on average 39 offers and 19 acceptances. There are between 373 and 542 NI-domiciled applicants to study medicine at QUB each year.

Since the number of funded places at QUB for 'Home and EU' students was reduced to 236/year in 2011, there has been between 152 and 191 new medical students entering QUB from a NI domicile background (mean 179.2). There are almost as many NI domicile students studying medicine in GB as there are studying medicine at QUB (mean 172/year in GB receiving student loans for tuition). In 2017, 190 NI domicile students started to study medicine at QUB and 190 in rest of the UK.

There are between 355 and 400 NI domiciles who commence F1 training each year and between 360 and 399 NI domiciles who commence F2 training each year in the UK. Between 50.4% and 60.8% of the NI domiciles enter Foundation year 1 training in NI and between 58% and 61.9% of the NI domiciles enter F2 training in NI each year.

Of the NI domiciles who attend QUB Medical School, 86% enter the NI Foundation School, compared with 42% GB domiciles and 33% International domiciles who attend QUB.

Of the NI domiciles who attend a GB medical school, 75% remain in GB for the Foundation Programme and 25% return to NI for Foundation training.

Key Finding 16

There are usually between 350 and 400 students from a NI domicile background entering medical school each year and a similar number of medical graduates from a NI domicile background progressing through the Foundation Programme each year. Therefore there is currently sufficient

interest among NI domiciles in following a medical career and the quality of applicant is sufficiently high to support an expansion to the number of medical school places in NI.

Key Finding 17

The continuing reduction in the number of applicants from NI domiciles to apply to study medicine in the UK and the decline in NI domicile applicants to study medicine at QUB is concerning.

Recommendation 4

The DoH should publicise medicine (and other health and social care career options) to young people from the age of 14 and provide positive messages about careers in medicine in NI in the news media to balance the current focus of the media almost exclusively on negative messages about healthcare in NI. (This recommendation aligns with Objective 1, Theme 1, Action 1 of the HSC Health and Social Care Workforce Strategy 2026).

Key Finding 18

There are different patterns of behaviour between NI domiciles who study medicine in NI and NI domiciles who study medicine in the rest of the GB with the majority of those studying medicine in GB remaining in GB to practise medicine. A similar pattern is seen among NI domiciles studying other subjects at GB universities. In view of the difficulty in attracting doctors from other parts of the UK, EEA or world to work in NI and therefore the dependence of healthcare services in NI on local medical graduates, an increase in the number of funded medical school places in NI is likely to be the most successful long term method of increasing the number of GPs, specialists and NCCGs who want to work in NI.

Recommendation 5

The DoH should expand the number of funded medical school places in NI from the current number of 236/year by at least an additional 100 places/year as soon as possible, preferably from September 2019.

The number of medical school places to deliver the GP, consultant and NCCG workforce that the service in NI will be predicted to need in 2033 has been estimated to be 445/year. A lower number for the increase (an increase of 100/year rather than of 209/year) has been recommended on the basis that other actions should be taken by the Department of Health to promote interest among doctors to work in health and social care, to work for longer and to work more efficiently.

While there is a low attrition rate during medical school (4%) and during the Foundation Programme (2% for F1; 3.6% for F2), there is a substantial number of doctors who are choosing not to enter GP/specialty training programmes after completion of the Foundation programme. While many of these doctors will be contributing to the delivery of healthcare in NI as short or long-term NCCGs or as locums, there is an urgent need to understand the aspirations and needs of these doctors and to facilitate them to progress to become long term, full-time employees in the HSC. Consideration should be given to a 'return of service' bursary as has been introduced for students on the Scottish Graduate Entry Medicine (ScotGEM) course where students are given a grant of £16,000 in exchange for working in NHS Scotland for up to 4 years.

There is also a need to address the relatively high attrition rate seen in many specialty training programmes in NI and to consider how the focus on training and working lives of these doctors could be improved so that the attrition rates in these programmes would be substantially reduced.

There is a need to consider how to improve the retention of trained doctors in the workforce and to encourage doctors to want to remain active in the workplace beyond the age of 60. The role of the trained doctor in primary or secondary care can be very demanding, both mentally and physically, particularly in branches of medicine with high workload intensity and significant levels of emergency work requiring 24/7 availability. For hospital-based specialists, it would be worth considering the work of the Scottish Government as detailed in their guidance 'Promoting the Retention of Established Consultants'.

There is also a need to consider how to attract doctors who are NI domiciles or domiciles from rest of GB, EEA and the world to come to work as doctors in the health service in NI.

The knowledge, skills and experience of doctors should be used efficiently so that they are utilising their skills most often in the mid-range of the complexity that their skills equip them for. Utilising doctors consistently at the lower end of their range of skills will be wasteful of a valuable human resource, frustrating to the doctors themselves and is likely to risk a loss of confidence and ability among those practitioners. Working at the upper end of their range of skills under consistent pressure all the time will stretch doctors and be efficient for the service but is likely to be associated with a higher risk of burnout, illness and premature retirement of these individuals.

If the approach to how doctors' skills are utilised, how they are supported and how their careers are managed in the HSC is not modernised or the modernisation is not successful and the service continues to function as it currently is, the need for medical school places will indeed be 445/year.

Recommendation 6
The DoH should consider linking a 'return of service' bursary to the additional funded medical school places - recommended to encourage the medical students taking up these additionally funded medical school places to commit to working for up to 4 years in the HSC after they graduate from medical school in NI.

Recommendation 7
The DoH should set up a short-life working group to examine the continuum of medical careers and make recommendations on how to actively manage medical careers so that doctors will remain motivated to continue in their role and will feel supported by the HSC to do so. The group should consider workload, out-of hours' commitments for older doctors, opportunities to develop roles and options for partial retirement. This recommendation aligns to Objective 2, Theme 8, Action 17 of the HSC Health and Social Care Workforce Strategy.

There has been an increasing number of students entering QUB medical school who already have completed an undergraduate degree (range 58-84/year, mean 70; years 2012-17). In addition there are on average another 17 NI domiciles who are entering medical school in GB with an undergraduate degree (range 14-22/year; years 2014-17).

In other parts of the UK, there are Graduate Entry Medicine (GEM) programmes which are four-year accelerated programmes in most cases but in some universities it is a five year course. Twelve medical schools offer this programme in England, two in Wales and Scotland are commencing a Scottish Graduate Entry Medicine Programme (ScotGEM) based at the Universities of Dundee and St Andrews.

There is a risk that NI domiciles who have already completed an undergraduate degree and now want to study medicine, will seek to study medicine at a medical school in GB if there is not the option of undertaking a graduate entry accelerated medical undergraduate course in NI. Data has shown that of NI domiciles who attend medical school in NI, 86% will remain in NI for their Foundation Programme and that if NI domiciles complete their medical degree in GB, only 25% return to NI for Foundation training.

Recommendation 8
The expansion of the funded medical school places in NI should provide an opportunity for students who have already completed an undergraduate degree to enter an accelerated Graduate Entry Medicine programme. It is recommended that 70 places of the proposed increase by 100 places/year in the provision of medical school places in NI are made available for graduate entry students on an accelerated programme.

It is important that those who are being recruited into the HSC workforce hold the values and the associated behaviours of a HSC system which has adopted the HSC Collective Leadership Strategy. While these values (compassion, collaboration, openness and honesty, excellence) are subject to consultation, the DoH should expect that those students that are selected to enter medical school in NI would be selected based on the values and behaviours of the HSC.

There are areas within NI, where it is difficult to attract doctors to work and to train. It is important that consideration is given, during the commissioning of additional medical school places, as to how to promote doctors to train and remain to work in underserved rural areas.

There are specialties within medicine which will expand over the next 10-15 years in response to changes in the prevalence of illnesses, increases in the elderly population and transformations in service (eg GP, geriatric medicine, oncology, orthopaedic surgery). Consideration is required as to how, during medical school, exposure to these specialties could be increased, experience in these specialties could be enhanced and how these specialties could be promoted as valuable and fulfilling medical careers.

Recommendation 9
In the commissioning of additional medical school places, the DoH should describe its expectations with regard to the values and behaviours of those selected into medical school, attraction of NI domiciles from underserved areas and organisation of the course so that students will be exposed to medical practice in underserved areas and to medical practice in specialties where the service will have its greatest need. This recommendation aligns to the HSC Collective Leadership Strategy.

There are a lot of uncertainties in the healthcare landscape in NI at the moment. The Review Group considered the potential impact of Brexit, service transformation and reconfiguration, new and enhanced healthcare roles, the impact of new technologies and treatments, the potential

implications of public inquiries and the introduction of new professional standards on the numbers of doctors needed in NI. These issues were discussed with a wide group of stakeholders. The unanimous view was that any potential reduction in the need for doctors due to the introduction of new technology or to service transformation would be offset by the need for increased medical contribution to implement new technology or to enable the service transformation to be delivered (more medical input to enable faster discharge and utilisation of beds more efficiently or to enable more effective use of ambulatory care facilities). New and enhanced roles were felt to be likely to complement existing medical roles rather than replace doctors and the effectiveness of these new roles would be seen in improved quality of care for patients. While the implications of Brexit remain unclear, none of the groups with whom the Review engaged felt that the introduction of new professional standards or the responses to public inquiries were going to result in a reduction in the need for doctors in any area of healthcare in NI.

However, it is recognised that it is difficult to plan ahead and the impact of some of these factors may become clearer over the next 3-5 years.

Data was gathered for the purposes of this Review from many different sources. However there were gaps in the data available to the HSC, there was considerable variation in the way data has been coded and analysed in the HSC and there has been insufficient attention paid to utilisation of all sources of data to inform workforce planning.

Recommendation 10
Due to the rapidity of change within the HSC and the range of challenges and uncertainties that it is facing, there should be a further review, within 5 years, of the number of medical school places that should be funded in NI. In order to facilitate that, there should be a prospective, systematic and consistent approach to the collection of medical workforce data (including applications to medical school, medical school progression, trainee progression, career progression data for GPs, NCCGs and consultants) facilitated by collaborations with organisations outside the HSC who hold valuable information (eg UCAS, UKMED, GMC). This recommendation aligns with Objective 3, Theme 10, Action 21 of the HSC Workforce Strategy 2026.

Part B - Main Report

What is being reviewed?

This review has been commissioned by the DoH to determine the optimum number of medical student places that Northern Ireland requires per year to meet the medical component of healthcare in NI. The 'optimum number' has been defined as the number of medical school places that DoH needs to fund to ensure that there is a sufficient supply of doctors progressing to become GPs, SAS doctors and consultants who choose to remain in NI to contribute to the delivery of healthcare for the population of NI. The full Terms of Reference can be found in Appendix 1.

Why is this review being undertaken?

The Expert Panel on the configuration of Health and Social Care Services in NI in their report **Systems, not Structures, changing health and social care**, highlighted the escalating demand faced by Health and Social Care (HSC) in NI due to growing:

- numbers of older people in our community due to an improving life expectancy
- numbers of people having long-standing health problems (currently 1 in 5 people)
- numbers of people suffering from multiple comorbidities - as the number of comorbidities dramatically increases in the higher age bands (older than 50)
- numbers of people who are overweight or obese
- expectations of the population

The Expert Panel went on to document the steady and persistent rise in consultation rates for GPs as well as increases in the number of ambulance responses, hospital outpatient appointments, inpatient and day-case hospital admissions and social care packages. This significant upturn in demand has exposed a lack of capacity to deal with the demand with lengthening waiting times for outpatient appointments, diagnostic tests and surgery.

The Expert Panel noted that there was a major flaw in the planning of the current medical workforce, which has been focused on filling rotas and maintaining existing, possibly unsustainable, services rather than being based on forecasting of demography and need.

In **Health and Wellbeing 2026 – Delivering Together**, the response of Minister of Health Michelle O'Neill to the report from the Expert Panel, there was recognition of a number of challenges faced by Health and Social Care NI:

- Organisational
- Workforce
- Needs of a rapidly changing and ageing population
- Health Inequalities

With regard to the workforce challenge, Minister O'Neill remarked on the difficulty faced by Health and Social Care in recruiting additional staff to meet the demand on services and the consequences of that difficulty with additional burdens being placed on already hardworking staff and a service

which has become progressively more reliant on short term solutions (locums and agency staff) with resultant increased expense and a negative impact on quality of care.

In response to these challenges, Minister O'Neill set out eighteen specific actions. One of these actions (Action 16) was to develop a Workforce Strategy covering all aspects of the HSC workforce including retention and recruitment, opportunities for introducing new job roles and up-skilling initiatives.

A Health and Social Care Workforce Strategy 2026, **Delivering for our People**, has now been published in May 2018. This strategy recognises the increasing difficulties in medical recruitment into training posts and permanent positions with growing numbers of vacancies affecting:

- core and some higher medical training posts
- specialty doctor and associate specialist level posts
- consultant posts

The overarching aim of the strategy is for the HSC to "meet our workforce needs - and the needs of our workforce" by focusing on three objectives:

1. By 2026, the reconfigured health and social care system has the optimum number of people in place to deliver treatment and care, and promote health and wellbeing to everyone in Northern Ireland, with the best possible combination of skills and expertise
2. By 2021, health and social care is a fulfilling and rewarding place to work and train, and our people feel valued and supported
3. By 2019, the Department of Health and health and social care providers are able to monitor workforce trends and issues effectively and be able to take proactive action to address these before problems become acute.

The strategy contains 24 actions arranged under the following 10 themes:

1. Attracting, recruiting and retaining
2. Sufficient availability of high-quality training and development
3. Effective workforce planning
4. Multidisciplinary and inter-professional working and training
5. Building on, consolidating and promoting health and wellbeing
6. Improved workforce communication and engagement
7. Recognising the contribution of the workforce
8. Work-life balance
9. Making it easier for the workforce to do their jobs
10. Improving workforce business intelligence

Under Theme 3, "Effective workforce planning", Action 5 is described as "Develop and by 2026, sustainably fund, an optimum workforce model for reconfigured health and social care services". One of the outputs required under Action 5 during 2018 is to review the number of funded medical school places in NI.

Who can work as a doctor in NI?

To work as a doctor anywhere in the UK (including NI), an individual must have graduated in medicine, and have obtained registration with a licence to practise medicine from the General Medical Council.

There are two categories of registration to work as a doctor in the UK: provisional registration and full registration. Provisional registration enables doctors to participate in and complete the first year of the Foundation Programme (F1). The law does not allow provisionally registered doctors to undertake any other type of medical post. F1 doctors must show that they have met the outcomes for provisionally registered doctors before they are eligible to apply for full registration and are able to enter the second year of the Foundation Programme (F2).

For a doctor to be able to work as a general practitioner (other than in a training capacity) or to take up a substantive post as a consultant, they must be on the respective GP or specialist register held by the GMC.

Within the European Economic Area (EEA), there is mutual recognition of equivalent training and qualifications and the right to free movement of workers between member states. At present, citizens of another EEA country who have completed basic medical training are entitled to apply for full registration with the GMC and a licence to practise medicine in the UK. Doctors from the EEA are also eligible to apply to join the GMC's specialist or GP registers provided they have the requisite equivalent training and qualifications.

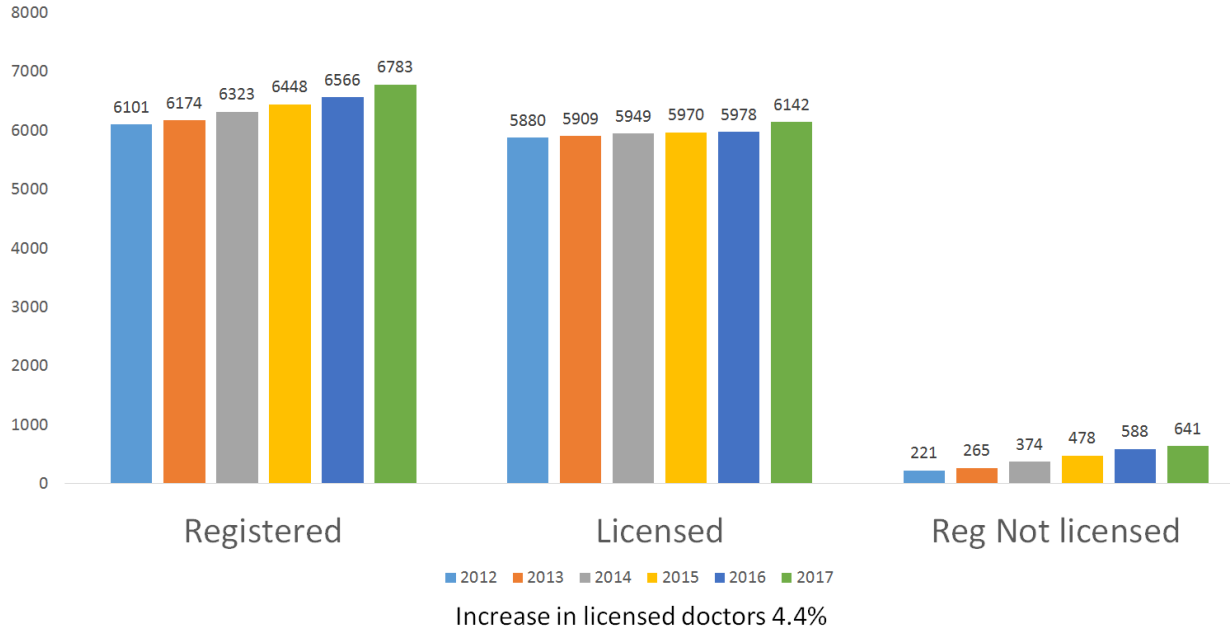
For doctors from outside the EEA, eligibility to work in the UK will depend on whether they hold an acceptable primary medical qualification (PMQ), have demonstrated that they have the required medical knowledge, clinical experience and knowledge of English, as well as satisfying the immigration requirements so that they have permission to work in the UK.

Who is available to work as a doctor in NI?

There were 6,096 doctors on the GMC's Medical Register with a Licence to Practise in March 2018 (GMC Data Explorer - https://data.gmc-uk.org/gmcdata/home/#/reports/The%20Register/Stats/report) who the GMC has identified as living in NI. However, being available to work and being actively involved in delivering care to the population in NI are different measures.

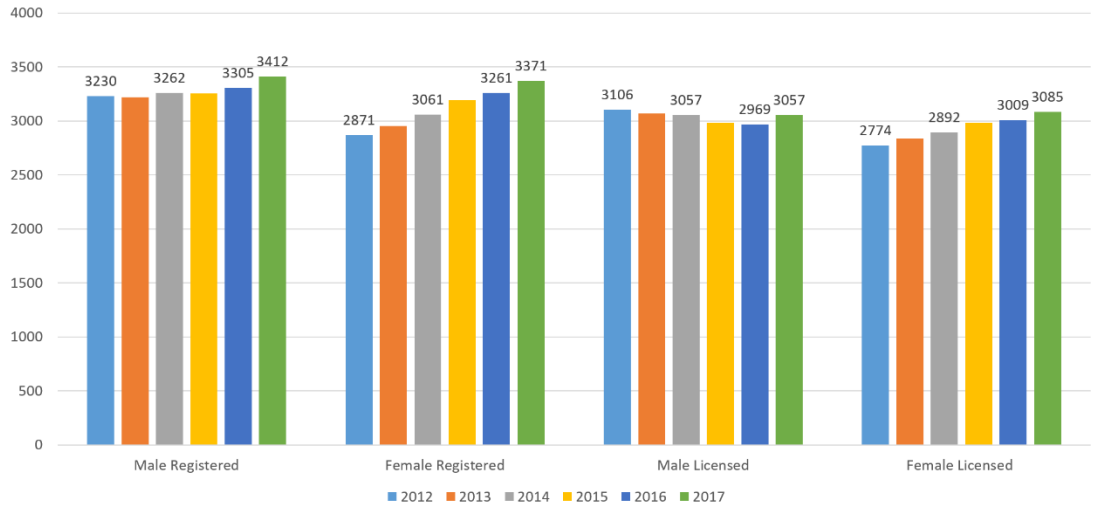
Using the GMC's State of Medical Education and Practice in the UK (SOMEP) data (https://www.gmc-uk.org/publications/somep2016.asp), there has been a gradual increase between 2012 and 2017 in the number of doctors living in NI who are registered, registered with a licence to practise and registered with no licence to practise (Figure 1).

Figure 1: Registered and Licensed doctors living in NI 2012-2017



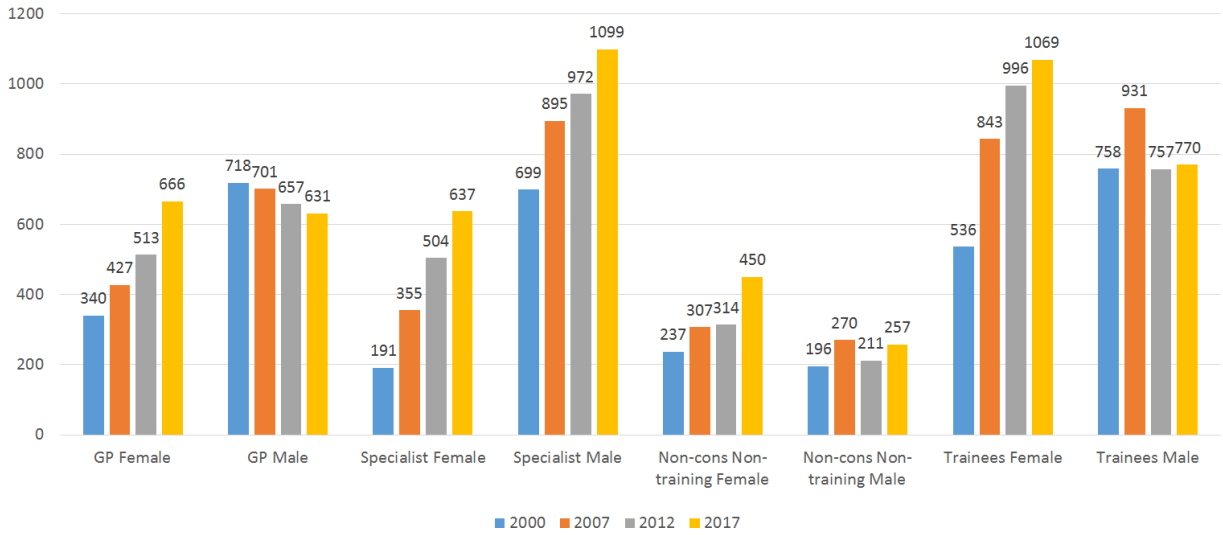
The GMC Data Explorer for March 2018 showed that there were 3084 female (50.6%) and 3012 (49.4%) male doctors living in NI. Most of the increase in doctors in NI who are registered and registered with a licence to practise is related to an increase in female doctors (SOMEP 2017)(Figure 2).

Figure 2: Male and Female Registered and Licensed doctors living in NI



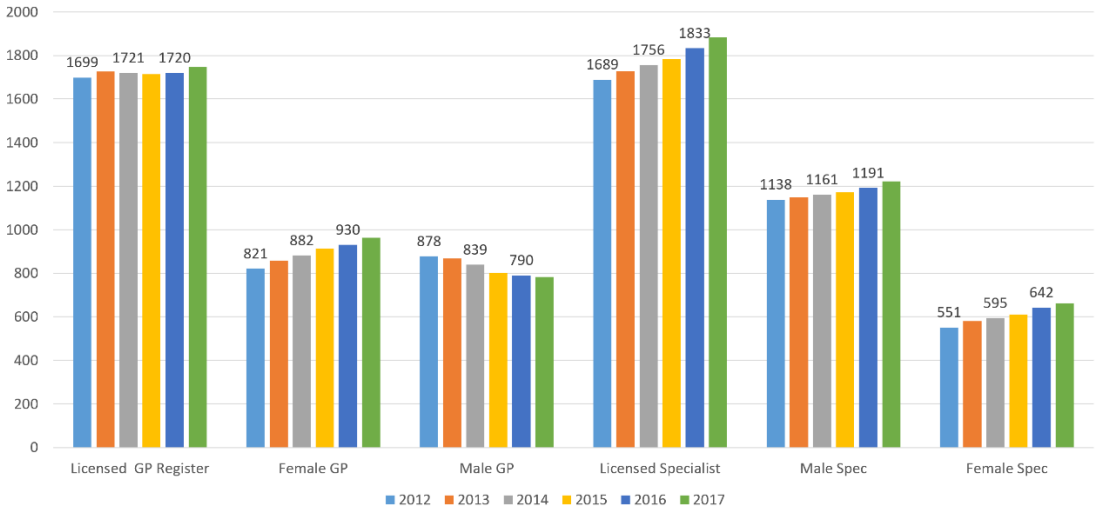
Data recorded by the HSC shows that over a 17-year period there were increases in the number of females who are trainees, GPs, non-consultant non-training doctors and specialists. In the same time period, the number of male trainees has stayed relatively steady, there has been a moderate increase in the number of male non-consultant non-training doctors and an increase in the number of male specialists but a decline in the number of male GPs (Figure 3).

Figure 3: HSC Medical Workforce Data – 2000 - 2017 (numbers)



The GMC's SOMEP data show similar trends although the data is only available since the inception of the GMC National Trainee Survey in 2012 (Figure 4).

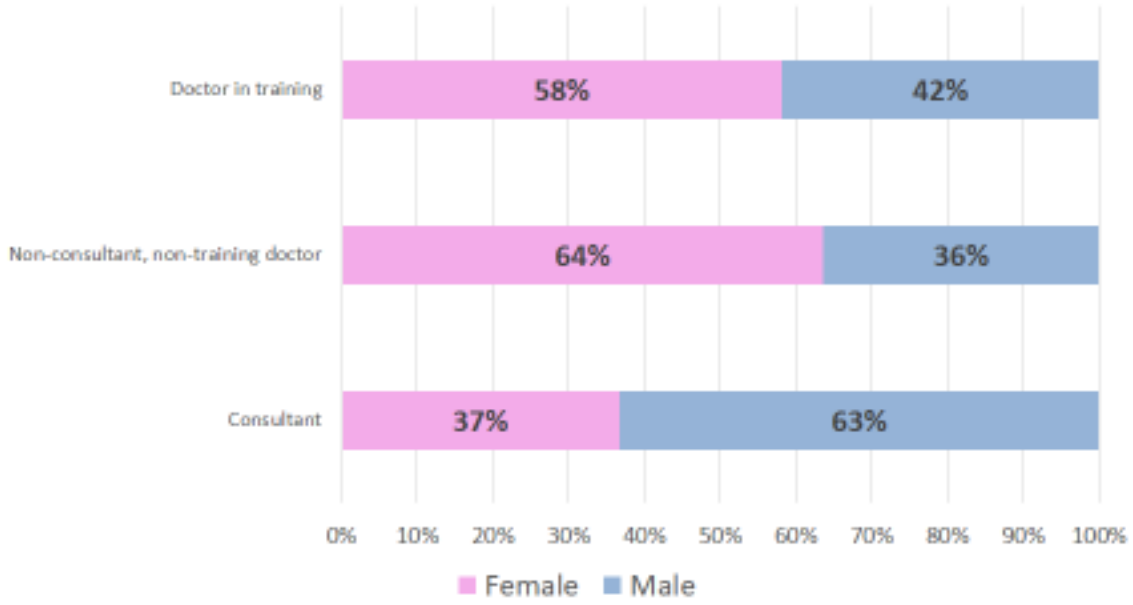
Figure 4: Licensed Doctors on the GP and Specialist Registers living in NI



% increase in Licensed GPs 2.8%; % increase in Licensed Specialists 11.5%

The relative percentages of female and male doctors working in the HSC vary according to the grade of doctor (HSC data)(Figure 5).

Figure 5: HSC Doctors by gender (March 2017)



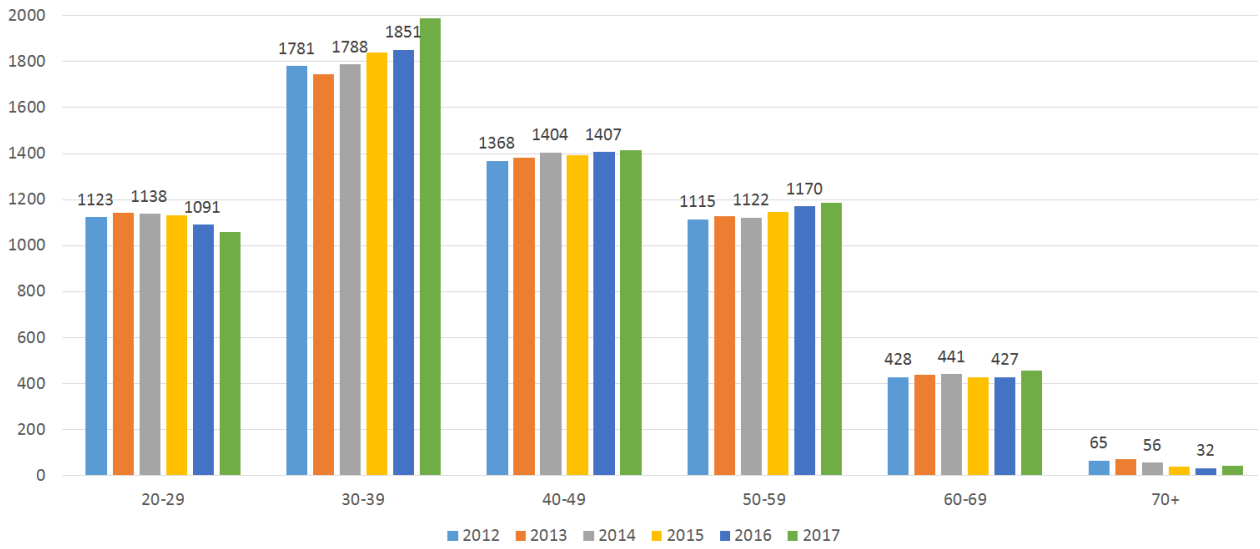
The GMC data explorer shows that there were 233 provisionally registered doctors living in NI and 5862 who were fully registered. The age bands for doctors with a licence to practise in NI are shown in Table 1.

Table 1: Age bands for doctors with a licence to practise living in NI (2018)

Age Group	Number of doctors/group
Under 25	114
25-29	990
30-34	1028
35-39	898
40-44	767
45-49	656
50-54	645
55-59	541
60-64	306
65-69	114
Over 70	37

Between 2012 and 2017, there has been a reduction in the number of doctors who are between 20-29, and an increase in the number between 30 and 39 (Figure 6).

Figure 6: Licensed doctors in Northern Ireland – By Age



The specialty designation for doctors with a licence to practise in NI (GMC Data Reports) is shown in Table 2.

Table 2: Specialty, GP, trainee or other category of licensed doctors living in NI

Specialty	Total
Anaesthetics & ICM	285
Emergency Medicine	80
General Practice*	1731
Medicine	511
Obstetrics & Gynaecology	119
Occupational Medicine	9
Ophthalmology	42
Paediatrics	120
Pathology	79
Psychiatry	206
Public Health	35
Radiology	172
Surgery	311
Trainees**	1808
Others (non-consultant, non-GP and non-trainee)***	588

**Those who have completed GP training successfully are eligible to have their name included on the GMC's General Practice Register.*

***Doctors are not eligible to have their names included on either the GMC's GP or the Specialist Register until they have completed their training programme successfully.*

****This group contains Specialty doctors, Staff Grades and Associate Specialists as well as Locally Employed Doctors (Clinical Fellows, Trust doctors, Medical Training Initiative Posts), longer term locums (Locum Appointments for Service) and Agency-based short term locums.*

All doctors with a licence to practise need to be revalidated, usually every 5 years, by the GMC to confirm that they are up to date and fit to practise. Most doctors are connected to a designated body for revalidation purposes. The connections of doctors to designated bodies provide an estimate of the number of doctors in NI who are contributing to the medical workforce; though the 5898 doctors documented below do not include F1 doctors (usually 252 in number in NI) as they are not fully registered, or doctors who are working in NI as locums but whose employment and connection to a designated body is through a locum agency based in the UK (Table 3).

Table 3: Connections of doctors working in NI to designated bodies in NI:

Organisation		Number of doctors
HSCB	GPs	1686
NIMDTA	Trainees	1659
Government Departments	Health	15
	Justice	4
HSC Trusts	BHSCT	993
	NHSCT	347
	SEHSCT	349
	SHSCT	387
	WHSCT	366
PHA	Public Health	32
NIBTS	Blood Transfusion	3
NI Hospice	Palliative Medicine	2
RQIA	Independent Sector	10
Non-NHS	Ulster Independent Clinic	26
	Kingsbridge Private Hospital	14
	Mirabilis	2
	Musgrave House	3

The GMC has supplied information on the number of doctors whose registered address is in NI and who are connected to locum agencies (Table 4). The GMC has highlighted that a doctor must update their designated body whenever it changes, but their registered address is updated less frequently and therefore is less reliable for locating a doctor to NI.

Table 4: Numbers of doctors with a registered address in NI who are connected to a locum agency

	2013	**2014**	**2015**	**2016**	**2017**
Number of Specialists	13	10	26	27	30
On neither register and not in training	11	24	101	201	244
Others	0	1	2	2	2
Total	24	35	129	230	276

Doctors practising in NI may obtain their primary medical qualification (PMQ) in the UK, European Economic Area (EEA) or in the rest of the world (International Medical Graduates).

- 85% doctors working in NI graduated from a UK medical school with 4228 graduating from Queen's University Belfast (69%)
- 73.9% GPs working in NI graduated from QUB;
- 67% Specialists working in NI graduated from QUB.
- 92% doctors working in NI graduated from either a UK medical school or a medical school in Ireland.
- The remainder of the doctors working in NI with a licence to practise graduated from medical schools in other parts of Europe (2.5%) or the rest of the world (5.5%).
- This compares with the rest of the UK where those who have graduated from a UK or Ireland medical school make up
    - 84.4% doctors in Scotland,
    - 67% in England and
    - 68.5% in Wales.

The GMC's SOMEP data has shown that the rise in the number of licensed doctors in NI is due to doctors who obtained their primary medical qualification in the UK, with a small decline in those with European qualifications and a greater decline in those who are International Medical Graduates (Figure 7):

Figure 7: Registered and Licensed doctors living in NI – by PMQ

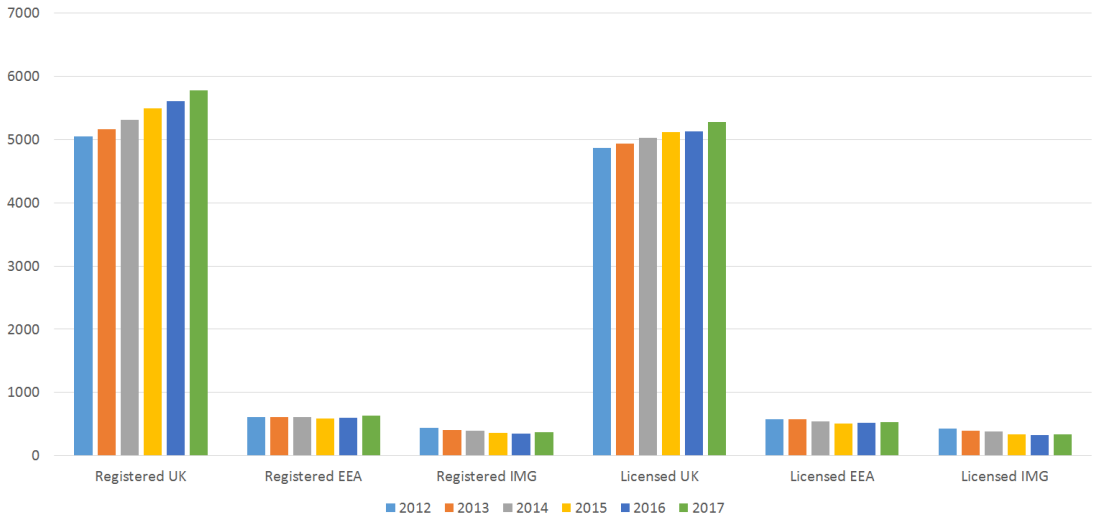


Table 5: Primary Medical Qualifications for Doctors working in NI vs those in the UK and relationship to age (in years)

	Trainees	Neither register – not training			GP Register		Specialist Register	
		<30	30-49	>50	<50	>50	<50	>50
NI								
UK PMQ	93%	93%	60%	60%	92%	81%	84%	75%
EEA PMQ	3%	6%	10%	14%	7%	17%	9%	16%
IMG PMQ	4%	2%	20%	26%	1%	1%	7%	9%
UK								
UK PMQ	86%	66%	29%	24%	81%	76%	61%	61%
EEA PMQ	4%	13%	14%	10%	4%	7%	16%	12%
IMG PMQ	11%	21%	57%	66%	15%	18%	23%	27%

This table shows that, compared to the whole of the UK, NI has a lower percentage of doctors working in GP who are IMGs and a higher percentage of doctors working in GP who are from an EEA PMQ background (which is thought to be due primarily to doctors who have graduated in Ireland).

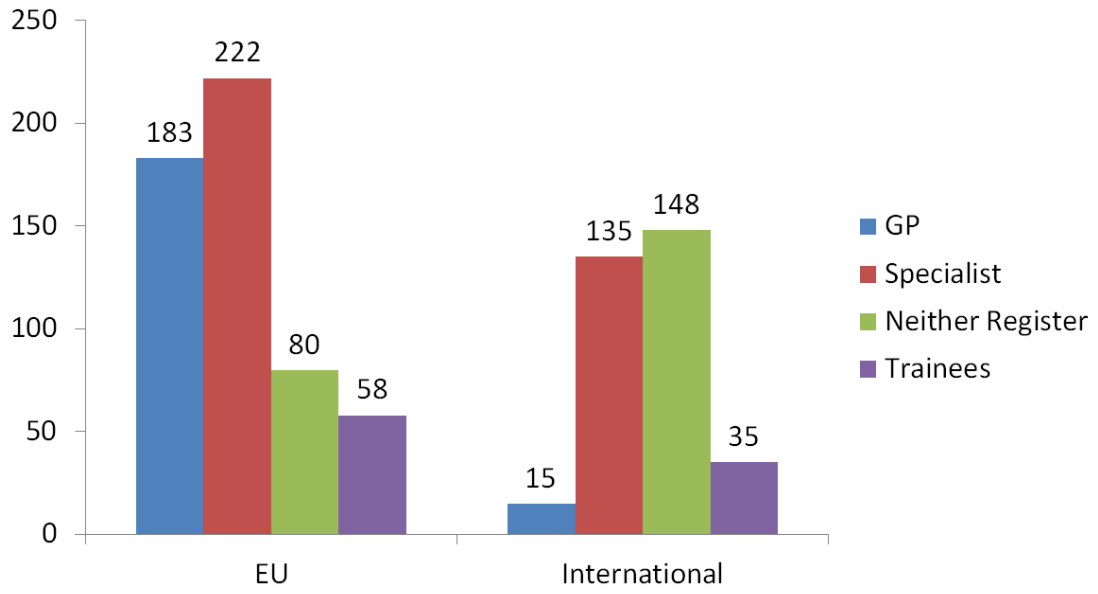
Table 6: Primary Medical Qualification by country of origin of Doctors living in NI with a licence to practise (6096 Drs)

PMQ	Number	Country (listing only those with 3 or more Drs)	
UK	5211	UK	
EEA	542	Czech 17	Lithuania 4
		Germany 15	Netherlands 4
		Greece 14	Poland 50
		Hungary 7	Romania 14
		Ireland 386	Slovakia 11
		Italy 4	Spain 7
International	343	Australia 6	Kenya 3
		Bahrain 3	Libya 7
		Bangladesh 3	Nigeria 18
		Egypt 31	Pakistan 67
		Ghana 4	South African 12
		India 128	Sri Lanka 3
		Iraq 8	Sudan 22
		Jordan 3	Syria 3

There is a difference in the pattern of registration between EEA and international domicile groups, with EEA domiciles being less well represented among the doctors who are on neither register and

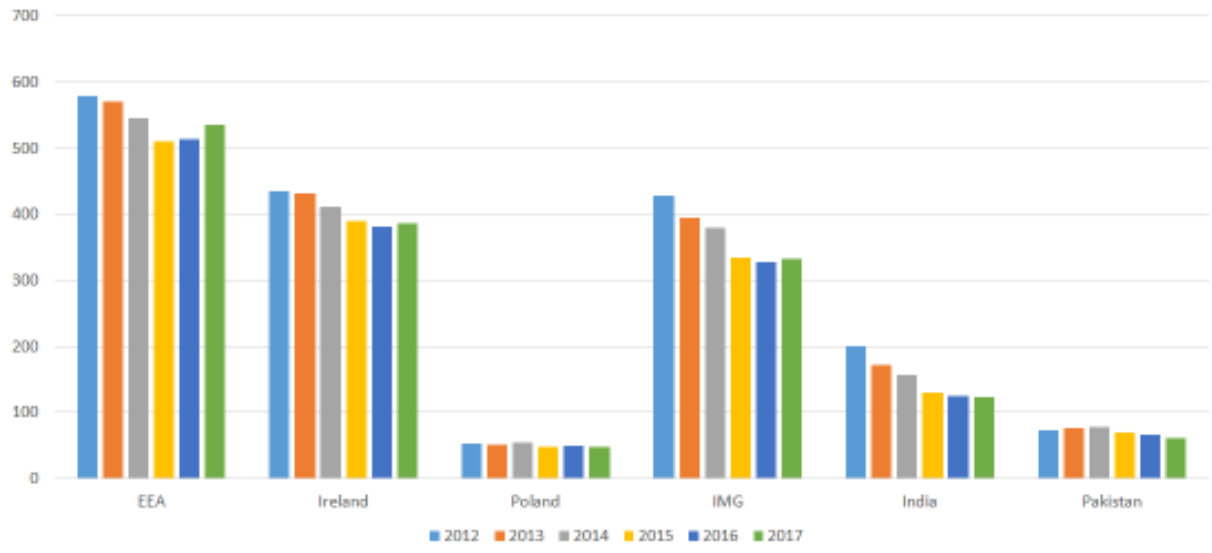
not in training (14.7%) and International Domiciles being less well represented on the GP Register (Figure 8).

Figure 8: Doctors from EEA and International Domiciles and their Registration Category



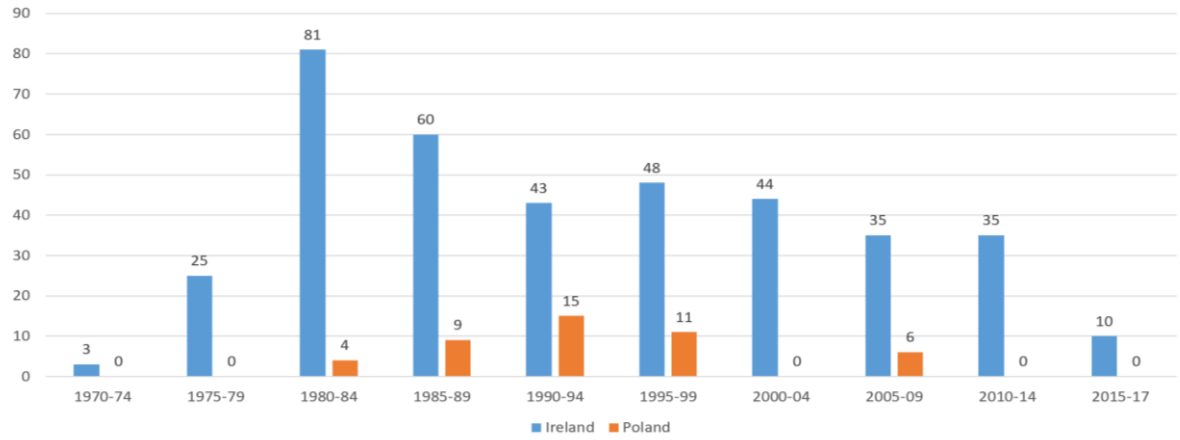
The majority of doctors from outside Europe who are working in NI with a licence to practise, originate from India or Pakistan (57% international doctors working in NI). There has been a reduction in the numbers of both EEA doctors and IMGs living in NI (Figure 9). A decline in the number of doctors from India may be related to a change in UK Immigration Laws in 2008 or to the improving economy in India. The introduction of revalidation in 2012 may have contributed to a number of older doctors of international domicile relinquishing their licence to practise.

Figure 9: Number of EEA doctors and IMGs who are GMC-registered with a licence to practise who are available to work in NI



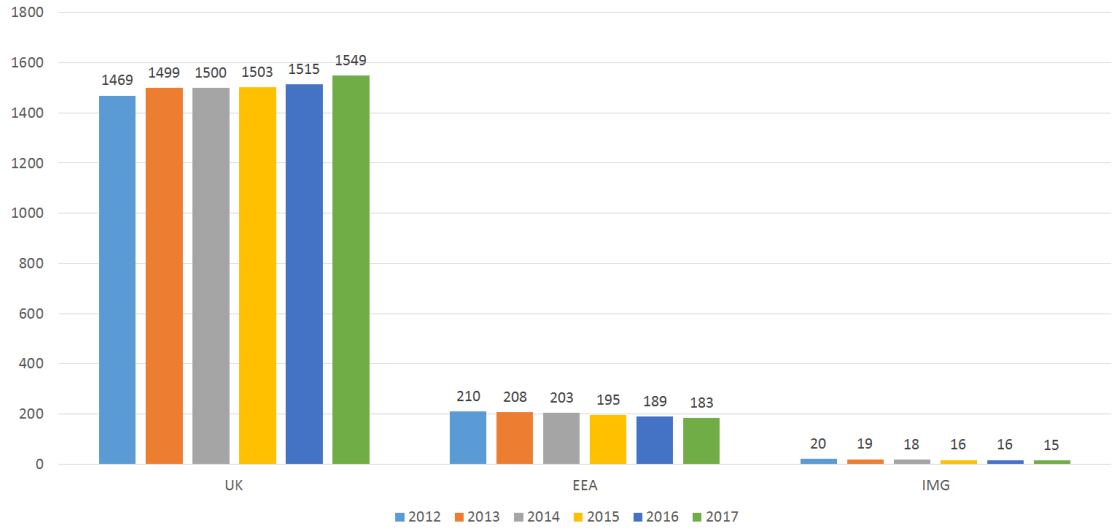
The majority of doctors of European origin working in NI have graduated either from Ireland (71%) or from Poland (9%). There are more Irish doctors working in NI who are older and fewer who have graduated in recent years (Figure 10).

Figure 10: European Qualified doctors living in NI – Year Range of Qualification



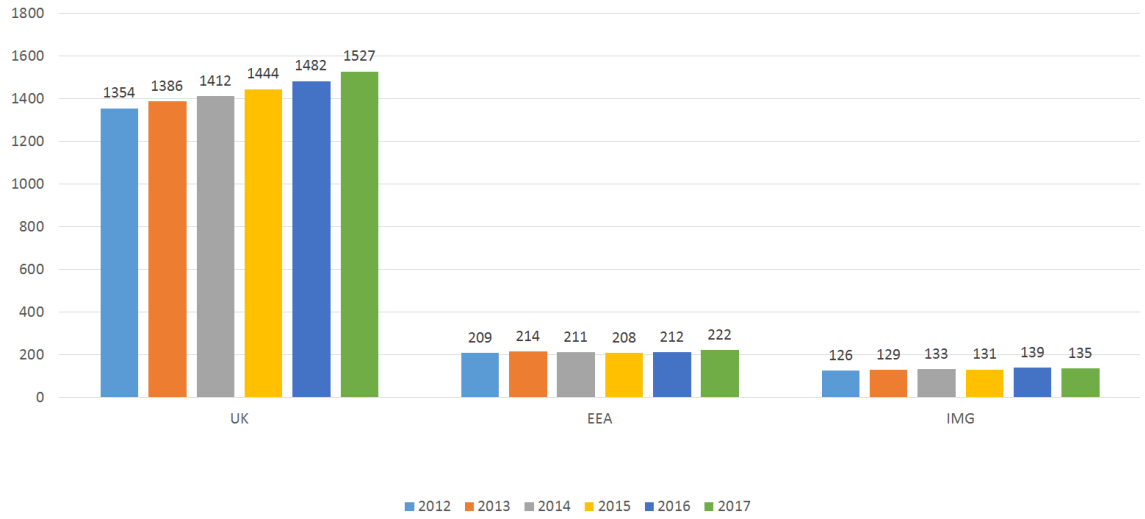
For GPs, the majority of doctors on the GMC's GP Register who are recorded as living in NI have graduated from a UK medical school (SOMEP 2017)(Figure 11).

Figure 11: Licensed Doctors on GP Register living in NI – by PMQ region



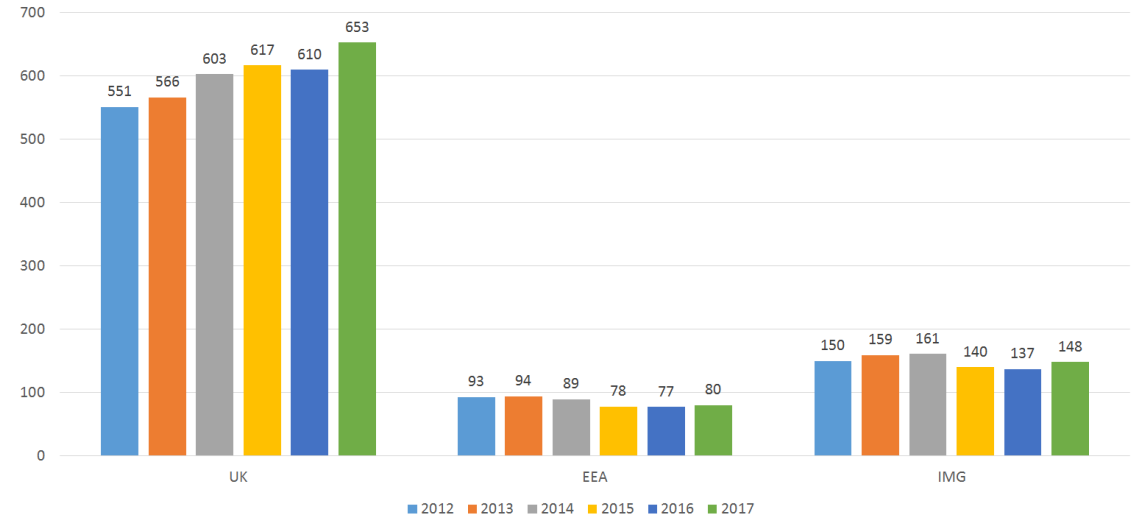
For Specialists, the majority of doctors on the GMC's Specialist Register who are recorded as living in NI have also graduated from a UK medical school (Figure 12).

Figure 12: Licensed Doctors on Specialist Register living in NI – by PMQ region



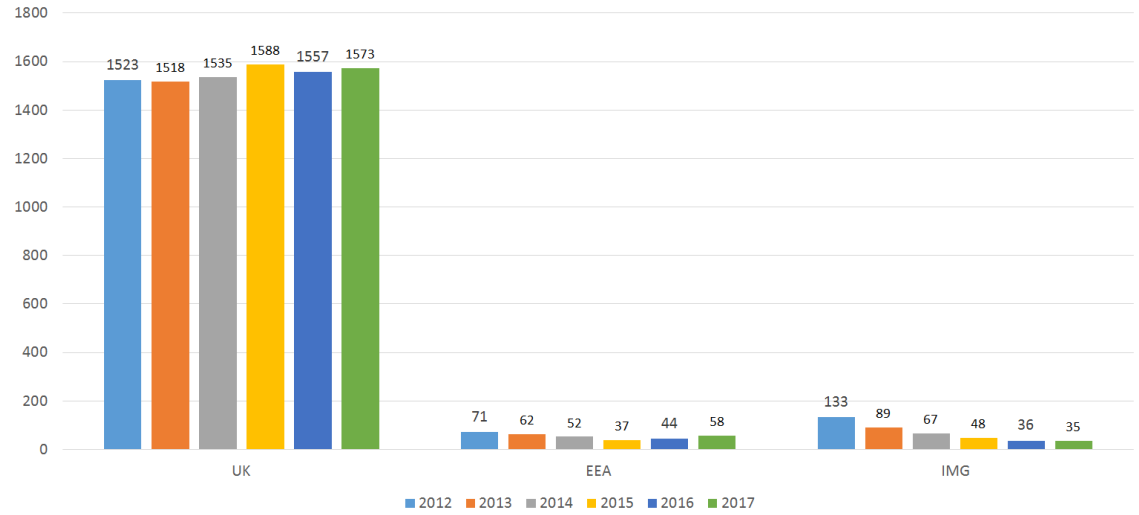
For doctors not on the GMC's GP or Specialist Register, the majority are UK medical school graduates, though a greater proportion are from an IMG background (Figure 13).

Figure 13: Licensed Doctors – on neither Register, not in training, living in NI – by PMQ region



For doctors in training, the majority are again UK medical school graduates (Figure 14).

Figure 14: Licensed Doctors in training living in NI – by PMQ region



The GMC data records doctors who are registered, with a licence to practise and which the GMC has determined using an algorithm are living in NI. This data is best considered as doctors who are available to work in NI rather than the doctors who are actually working in NI. What the HSC in NI needs are doctors, who possess the required knowledge, skills and experience, who are equitably distributed and accessible by the population and who are motivated to deliver high quality care in NI being supported by the health system to do so.

How are doctors trained in the UK?

To work as a doctor in the UK, an individual must have graduated in medicine, and have obtained registration with a licence to practise medicine from the General Medical Council.

(a) Entry to UK Medical School

Medicine is a popular career choice and competition for places at medical schools in the UK remains extremely high. The General Medical Council (GMC) defines the required outcomes which medical graduates must meet in order to become registered and practise legally as doctors in the UK. While the GMC requires selection procedures to be open, fair and transparent, medical schools are able to set their own policies in how they select their students according to the needs and objectives of a given medical school. Medical schools use various methods to select their students including admissions tests, assessment centres, panel interviews and multiple mini-interviews.

Generally the minimum entry requirements to study medicine are three As at Advanced level (General Certificate of Education A level) or equivalent qualifications. One subject, sometimes two, must be in a lab-based science and some medical schools also require mathematics or physics at A level.

There are currently 35 medical schools in the UK and a variety of different types of courses:

1. Standard Entry Medicine
2. Graduate Entry Medicine (GEM)
3. Medicine with a Preliminary Year
4. Medicine with a Gateway Year

Entry requirements for all of the UK's publicly funded bachelor's degree in medicine are described in the Medical Schools Council publication "Entry requirements for UK Medical Schools" (https://www.medschools.ac.uk/media/2357/msc-entry-requirements-for-uk-medical-schools.pdf)

Application to study medicine in the UK is via the Universities and Colleges Admissions Service (UCAS). Each year, UCAS publish data on the number of applications received to study medicine and dentistry in the UK and the number of applicants to study medicine (https://www.ucas.com/file/130741/download?token=g_2adVK00).

(b) European and International Medical Schools

UK domiciles may also apply to study medicine in one of the five medical schools in the Republic of Ireland or may choose to study medicine in one of the medical schools in mainland Europe, most often at a medical school where the course is taught in English (eg Bulgaria, Czech Republic, Hungary, Cyprus, Lithuania, Latvia).

(c) Foundation Training

After graduation in medicine in the UK, provisionally registered doctors are eligible to apply to enter the UK-wide 2-year Foundation Programme. Applications are coordinated nationally by the UK Foundation Programme Office and administered through Oriel. The aim of the Foundation Programme is provide doctors in training with experience and training in a range of different areas

of medicine, being responsible for caring for patients under the supervision of more experienced doctors. Foundation year 1 doctors must show that they have met the outcomes for provisionally registered doctors before they are eligible to apply for full registration with the GMC. Virtually every UK domiciled graduate from a UK medical school enters the UK Foundation programme and all but a small number complete it. After finishing the Foundation Programme, doctors choose an area of medicine to focus their training on – general practice or a specialty.

(d) GP and Specialty Training

The next stage of formal medical training in the UK is by enrolment in a GP or specialty training programme. Doctors may enter GP or specialty training through competitive application after successful completion of the Foundation Programme. GP or specialty training programmes generally take between three and eight years to complete. The indicative training time is three years for general practice, six years for medical, psychiatric and emergency medicine and up to eight years for some surgical specialties, paediatrics and obstetrics and gynaecology.

Specialty training programmes may be uncoupled (core and higher components) or run-through. In NI, there are also opportunities to undertake training for up to 1 year in duration as a Locum Appointment for Training (LAT) in a specialty. These appointments are of fixed duration, but up to 2 years as a LAT can be counted towards training if the doctor is subsequently successful in an application to enter Specialty Training.

Doctors who have successfully completed their GP, higher specialty, or run through specialty training programme are awarded a Certificate of Completion of Training (CCT) and are eligible for admission onto the GP or Specialist Register held by the General Medical Council.

Some doctors exit GP or Specialty training programmes due to difficulties with career progression or examination success, to pursue a different career pathway or for personal reasons. Some of these doctors will undertake locums and others will take up a substantive non-training non-consultant post.

(e) Breaks from training

Although doctors may progress directly from Foundation training into a GP or Specialty training programme and from core to higher specialty training (Anaesthetics, Emergency Medicine, Medicine, Psychiatry, Surgery), many now take a break from training after Foundation or between core and higher specialty training. During this time, doctors may explore different career options, work overseas, undertake locums or take up a non-consultant non-training post. These doctors may return to training having gained experience and further qualifications. Others may choose not to re-enter a training pathway and to take up a substantive non-training non-consultant post.

(f) Non-training non-consultant posts

There are large and expanding numbers of hospital doctors within the UK who are making substantial contributions to the delivery of healthcare but are neither in training nor on the GMC's specialist register. There are two key groups:

1. SAS doctors – comprised of Staff Grades, Specialty doctors and Associate Specialists. They often have considerable experience in a specialty and tend to stay with an employer for

several years. After accumulating experience in the role, they may apply for entry to the Specialist Register via the equivalence route (Certificate of Eligibility for Specialist Registration - CESR)

2. Locally Employed doctors – this group are usually employed in non-training non-consultant posts of shorter tenure eg Trust doctors, Clinical Fellows, Medical Training Initiative placements (www.nact.org.uk/getfile/7499/)

(g) Locums

Doctors in training and in permanent posts may undertake locums in their free time to fill gaps in rotas in addition to their usual roles. There are also doctors who will undertake locums in gaps between employments, during breaks from training or long term for personal reasons. Locums may be undertaken on junior (Foundation equivalent), middle-grade (specialty training or SAS equivalent) or consultant levels.

(h) GPs

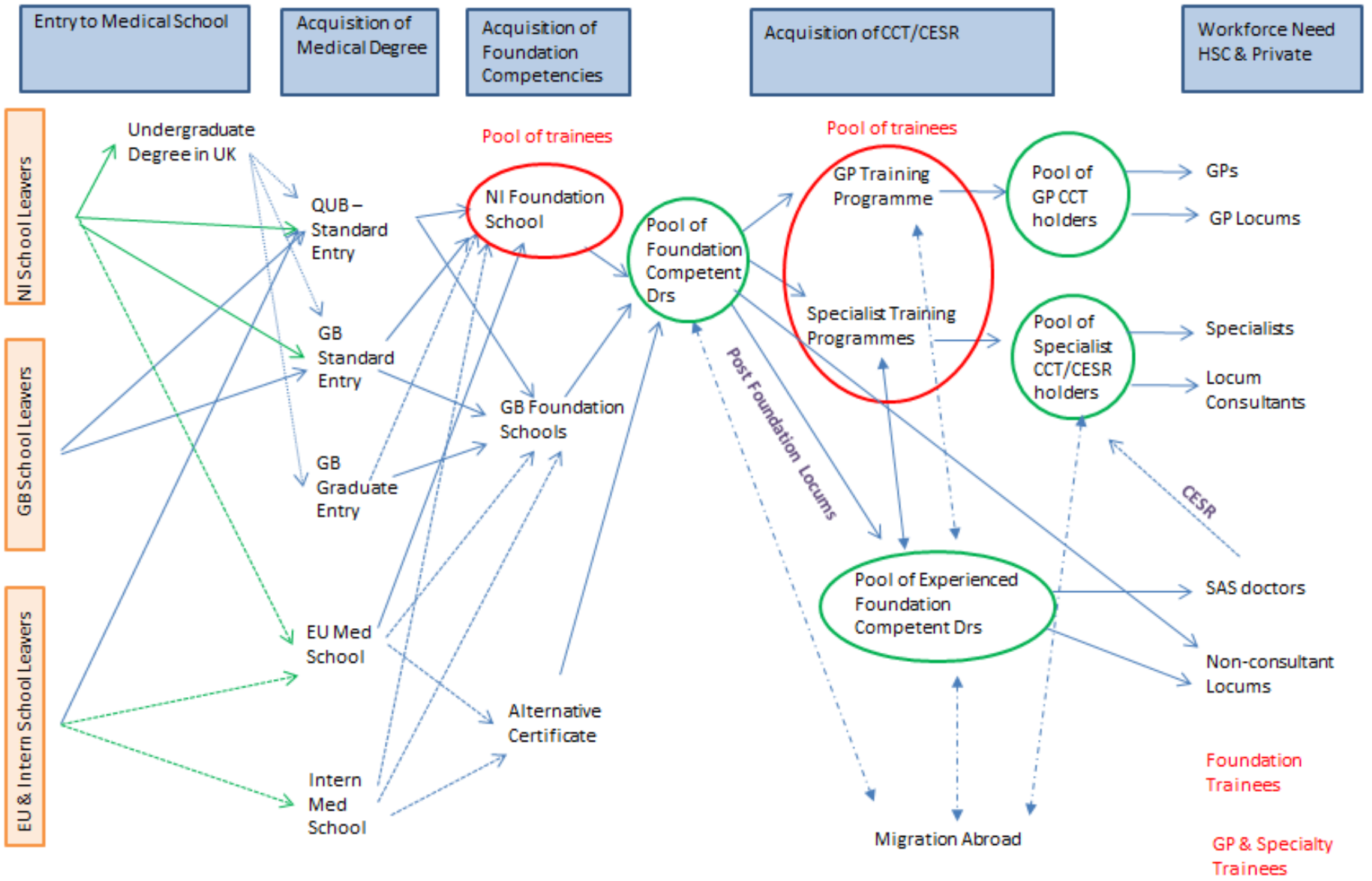
To work in general practice in the health service in the UK, a doctor must be either a doctor in training in general practice or have gained entrance to the GMC's GP register by completing training (CCT – certificate of completion of training) or have demonstrated experience and training equivalence (Certificate of Eligibility for GP Registration - CEGPR).

(i) Consultants

To work as a specialist in the UK, a doctor must have completed training (CCT) or demonstrated experience and training equivalence (Certificate of Eligibility for Specialist Registration - CESR).

The training pathways, groups of doctors and types of posts available are shown in the Figure 15.

Figure 15: Training Pathways, Group of Doctors and Types of Medical Posts in NI



Are there currently enough doctors in NI?

The number of doctors per 1000 population varies across the UK with the highest ratio being found in Scotland with the ratio in NI being comparable to that found in Wales (Table 7). The relative percentages of doctors on the GP register, Specialist register and in training are very similar when NI is compared with the rest of the UK (Table 8). The age profile of doctors living in NI is similar to that of the rest of the UK for doctors on the GP register and on the Specialist register with a somewhat younger profile for those who are not in training and on neither register (Table 9).

Table 7: Ratio of doctors per 1000 population

	Size of population (million)	Number of Doctors	Ratio Drs/1000 population
England	55.27	194,816	3.52
Scotland	5.40	19,992	3.70
Wales	3.11	9,989	3.21
NI	1.86	6,142	3.29

(Size of population derived from Office for National Statistics (ONS) mid-2016 and the number of doctors in each country from GMC Register 2017).

Table 8: Relative percentages of different groups of doctors in NI compared with the rest of UK

	Drs in training	Neither Register Not in Training	GP Register	Specialist Register
NI - number	1666	881	1747	1884
NI – relative percentage	27%	14%	28%	31%
UK – relative percentage	25%	18%	25%	31%

Table 9: Relative percentages of doctors in different age groups and GMC Registers in NI compared with the rest of UK

	Neither Register – Not in training			GP Register		Specialist Register	
	<30	30-49	50+	<50	>50	<50	>50
NI – number	205	471	205	1041	706	1087	797
NI- %	23.3%	53.6%	23.3%	59.5%	40.4%	57.7%	43.3%
UK %	16.5%	60.9%	22.5%	60.1%	39.8%	56.1%	43.9%

The foundation of a health workforce which is able to respond to the healthcare priorities for the population is effective matching of the supply and skills of health workers to population needs, now and in the future.

(a) GP Workforce

In NI, a report was submitted to the DoH in October 2014 by the GP Medical Workforce Planning Group on the number of training places that were needed in NI for GP training.

This report highlighted a significant shortfall in the necessary GP workforce as a result of increasing demand, transformations in service provision (shift left) and shifting work patterns due to increased part-time working and changes in the professional gender balance. Some of the factors contributing to the rising demand were that, compared with the rest of the UK, Northern Ireland has:

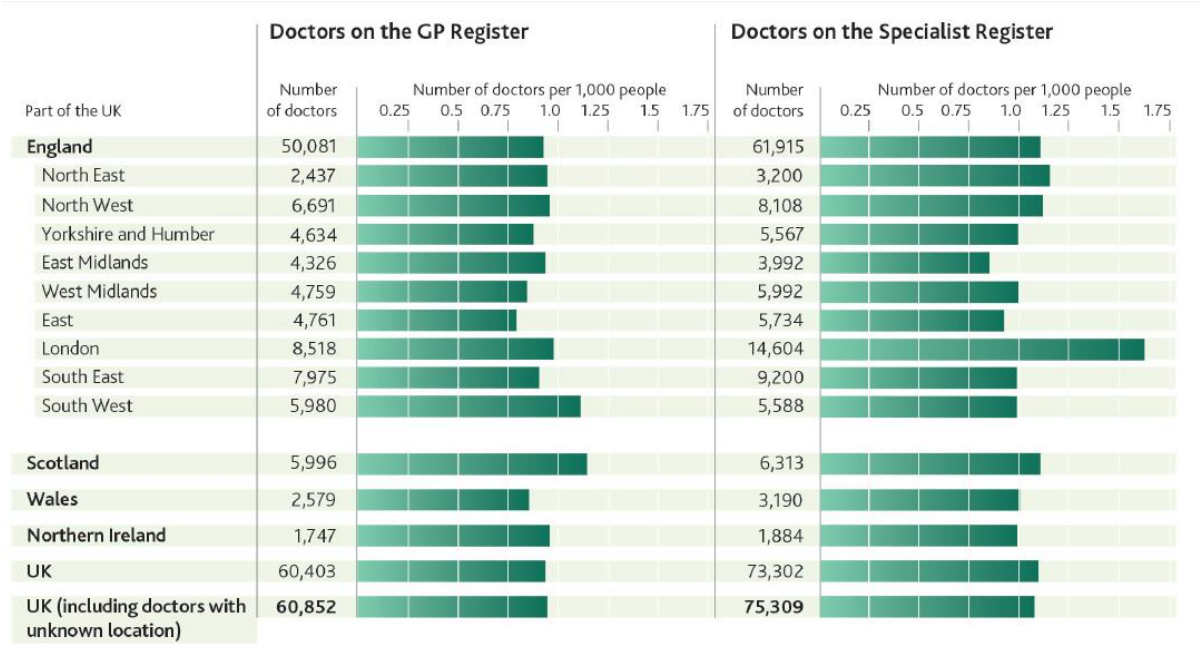
1. the fastest growing population in the UK
2. the highest average need per person in the UK
3. the highest demand for out-of-hours (OOH) services

Shortfall in GP workforce was manifested by difficulty in:

- filling locum sessions with associated problems for GPs in taking annual leave and the need for existing GPs to work additional hours
- filling out-of-hour shifts with associated frequent temporary closures of OOH bases
- recruiting salaried GPs and GP partners

Concern had been expressed in the report that NI had the lowest relative number of GPs in the UK. The GMC's SOMEP report in 2017 showed that NI has just above the average number of doctors on the GP Register per 1000 people (Figure 16).

Figure 16: Doctors on the GP and Specialist Register per 1000 people in UK countries



(Figure derived directly from SOMEP report 2017)

Concern had also been expressed in the GP Medical Workforce Planning report that the GP workforce in NI was older than elsewhere in the UK. However the recent GMC SOMEP data from 2017 shows a comparable age profile of doctors on the GP register who are living in NI compared with elsewhere in the UK (Figure 17).

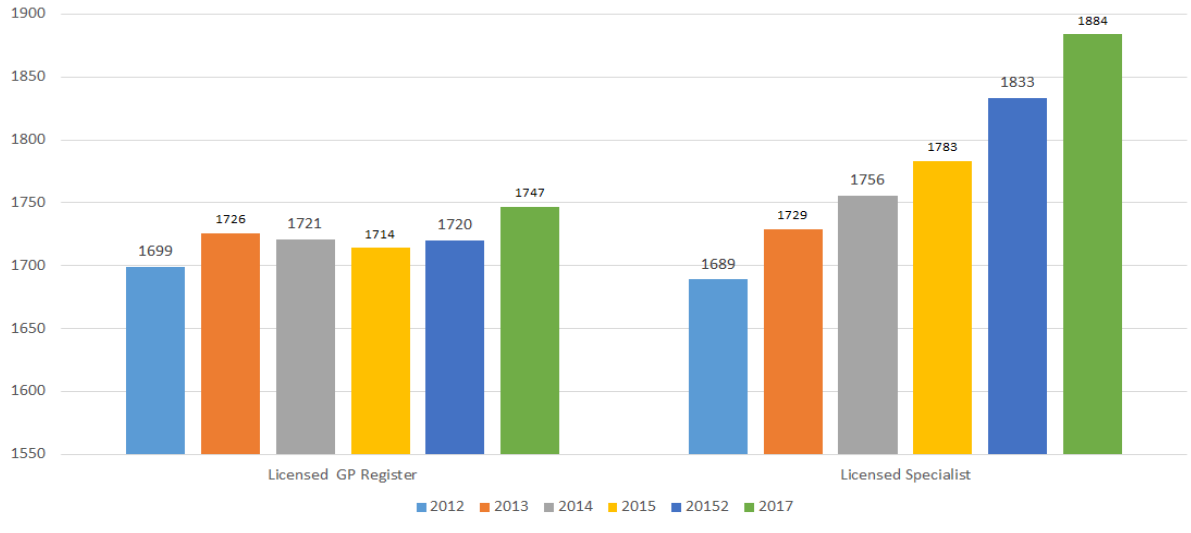
Figure 17: Doctors on the GP and Specialist Register – Age Range in UK Countries

Part of the UK	Licensed doctors on the Specialist Register: Number of doctors	Age (years) <40	40–49	50–59	≥60	Licensed doctors on the GP Register: Number of doctors	Age (years) <40	40–49	50–59	≥60
England	61,915	14%	41%	31%	14%	50,081	29%	31%	27%	13%
North East	3,200	17%	40%	31%	12%	2,437	26%	34%	28%	12%
North West	8,108	15%	41%	30%	14%	6,691	32%	31%	26%	11%
Yorkshire and Humber	5,567	14%	42%	31%	13%	4,634	29%	32%	29%	10%
East Midlands	3,992	14%	41%	32%	13%	4,326	27%	33%	28%	12%
West Midlands	5,922	12%	42%	32%	13%	4,759	29%	30%	27%	13%
East	5,734	12%	42%	31%	15%	4,761	24%	31%	31%	14%
London	14,604	17%	40%	28%	15%	8,518	33%	28%	22%	17%
South East	9,200	13%	42%	31%	15%	7,975	26%	32%	30%	12%
South West	5,588	13%	42%	33%	12%	5,980	27%	32%	31%	11%
Scotland	6,313	16%	40%	32%	11%	5,996	28%	31%	31%	10%
Wales	3,190	11%	41%	34%	13%	2,579	26%	30%	30%	15%
Northern Ireland	1,884	18%	40%	29%	13%	1,747	34%	25%	29%	11%
UK	73,302	15%	41%	31%	14%	60,403	29%	31%	28%	13%
UK (including doctors with unknown location)	**75,309**	**15%**	**41%**	**31%**	**14%**	**60,852**	**29%**	**31%**	**28%**	**13%**

(Figure derived directly from SOMEP report 2017)

The GMC SOMEP data indicates that between 2012 and 2017, there has been an increase in the number of GMC-registered and licensed GPs resident in NI; but the increase has been much slower than the increase in the number of GMC-registered and licensed specialists resident in NI (Figure 18).

Figure 18: Licensed doctors on GP and Specialist Registers living in NI



% increase in Licensed GPs 2.8%; % increase in Licensed Specialists 11.5%

At the time of the report from the GP Medical Workforce Planning Group, there were 65 training places per year on the GP training programme in NI. Using England as a comparator, it was estimated that for the size of the population in NI, there needed to be 95 training places per year at that time (2013-14) and that this should be increased by a further 20% which would equate to 111 GP training places/year. The report recommended a phased increase in the number of GP training places per year in NI from 65/year to 111/year over a 4 year period. This recommendation was accepted.

The number of funded places on the GP training programme was increased to 85 per year in August 2016, to 97 per year from August 2017 and is planned to increase to 111 per year from August 2018.

- For the training year 2016/17, NIMDTA recruited 85 doctors to the training programme with 80 recruited via national recruitment and 5 by Inter-Deanery Transfer.
- For the training year 2017/18, NIMDTA recruited 93 doctors to the training programme with 89 recruited via national recruitment and a further 4 trainees by Inter-Deanery Transfer.
- For the training year 2018/19, NIMDTA recruited 87 doctors to the GP training programme with 86 via national recruitment round 1 and has accepted an additional trainee via Inter-Deanery Transfer. Subsequently there have been six resignations from the programme leaving a net recruitment of 81 doctors. Round 2 is being undertaken in August 2018 and it would be hoped that the fill rate for the programme for 2018/19 will be increased.

The expected effect of the expansion in the available GP training places/year in NI on the number of licensed doctors on the GP register available to work in NI will not be seen until at least August 2019 and should be more fully evident by August 2021. However, it remains to be seen whether it will be possible to recruit 111 doctors per year to the GP training programme in NI on a recurrent basis.

(b) Hospital Specialties

Medical Workforce Plans have been put together for Trauma and Orthopaedics, Urology, Emergency Medicine, Paediatrics, Anaesthetics and Intensive care, Neurology, Dermatology and acute medical specialties (Acute Internal Medicine, Endocrinology, Gastroenterology, Geriatric Medicine, Respiratory Medicine and Rheumatology) between 2014 and 2018 by the Public Health Agency. These specialties represent approximately 40% of all hospital-based specialties as determined by the proportions of consultants currently working in these specialties.

These workforce plans identified vacant posts at consultant and non-consultant career grade (NCCG) level across a number of specialties (Table 10).

Table 10: Vacant Consultant and NCCG posts in NI – from Medical Workforce Plans

Specialty	Vacant Consultant Posts	% Vacant Consultant Posts	Vacant NCCG posts	% Vacant NCCG posts
Trauma & Orthopaedics	5	9.2%	3	15.7%
Urology	2	8.7%	4	40%
Emergency Medicine	5	7.1%	31	46.2%
Paediatrics	9	8.3%	4	4.9%
Anaesthetics & Intensive Care Medicine	4	0.5%	2	5.8%
Neurology	2	10%	1	50%
Dermatology	1	4.2%	1	7.7%
Acute Medical Specialties	21	8.85	15	16.1%
Total	**49**	**6.3%**	**61**	**19.6%**

The HSC has been involved in an International Medical Recruitment drive since 2016. In preparation for that drive, HSC Trusts were contacted regarding vacancies at consultant and non-consultant non-training grades. The vacancies identified in February 2016 are summarised in Table 11.

Table 11: Vacant posts identified by HSC Trust for International Medical Recruitment

Specialty	Consultant	NCCG
Clinical Radiology	35	0
Emergency Medicine	21	69
Paediatrics	3	8
Psychiatry	5	3
Anaesthetics	3	13
Medicine	14	4
Obstetrics & Gynaecology	0	3
Surgery	2	18
Total	**83**	**118**

A census has been undertaken of established NCCG and consultant posts, directly employed NCCGs and consultants, established posts covered by directly employed or agency locums and vacant temporary and permanent posts. HSC Trusts have held this data in different formats and not necessarily under the different specialty groupings requested for this report. This has made collation and analysis of these data more difficult.

Therefore data supplied by Trusts has been triangulated with data from other sources (HSC Workforce Planning; Royal College of Physicians Census 2016; GMC Data Explorer 2018) and an agreed number determined by the Core Group.

Table 12: Comparisons of data sources on Specialists working in NI

	HSC Data Trust Staff in post	HSC Workforce Planning Data	GMC Data – Licensed doctors	Agreed number (Range)
Anaesthetics	250	240	276	260 (240-276)
Emergency Medicine	77 (72 in post)	65 (+ 5 vacancies) November 2014	73	74 (65-77)
Medicine	412 (379 head count; 33 temporary)	RCP Census 2016 397	475	440 (412-475)
Obstetrics & Gynaecology	106		116	110 (106-116)
Ophthalmology	36		41	38 (36-41)
Paediatrics	140 (127 + 13) may include paediatric surgery	117 (not including neonates or PICU)	113	117 (113-140)
Pathology	100		77	77 (77-100)
Psychiatry	181		196	188 (181-196)
Public Health Medicine	23	32 (GMC Revalidation)	35	30 (23-35)
Radiology	147 (137 in post)	131 (accurate as at 2018)	171 (will include clinical oncology)	150 (131-171)
Surgery	266 (247 + 19)		291 (may include retired and private practice)	280 (266-291)
Corporate	36 (18 in HSCB)			36
Total	1774			1800

A figure higher than the HSC Trust staff return has been accepted for most specialties as it is known from GMC Revalidation data that there are 55 doctors connected to designated bodies in the independent sector.

In addition, there is an average of 108 consultant vacancies in the HSC at any time (Table 13). Therefore the estimated current number of specialists providing care in NI is 1908.

Table 13: Consultant (specialist) vacancies in HSC March 2012 - March 18

	Vacancies (Head Count)
March 2012	103
March 2013	99
March 2014	155
March 2015	161
March 2017	101
June 2017	115
Sept 2017	129
Dec 2017	111
March 2018	108

Total Consultant Need in 2018
1800 + 108 = 1908

The number of NCCGs recorded as working in the HSC has increased from 433 in 2000 to 707 in 2017 (Figure 3). The progressive rise in the number of NCCGs in the HSC is shown in Table 14 (the difference in absolute numbers between Figure 3 and Table 14 is thought to be due to timing of reporting during 2017). The number of vacancies among NCCGs in NI in March 2018 as recorded by the HSC is 67 (Table 15).

Table 14: Number of NCCGs working in HSC 2007 -17

	Head Count	WTE
March 2007	572	412.9
March 2008	601	441.2
March 2009	529	377.9
March 2010	487	352.6
March 2011	496	366.4
March 2012	517	379.9
March 2013	583	445.8
March 2014	643	473.2
March 2015	696	482.6
March 2016	661	469.5
March 2017	682	487.9

(WTE = Whole Time Equivalent)

Table 15: NCCG vacancies in HSC March 2012- March 2018 and breakdown March 2017- March 2018

	March 2012	March 2013	March 2014	March 2015	March 2017
SAS Vacancies	52	47	49	76	65

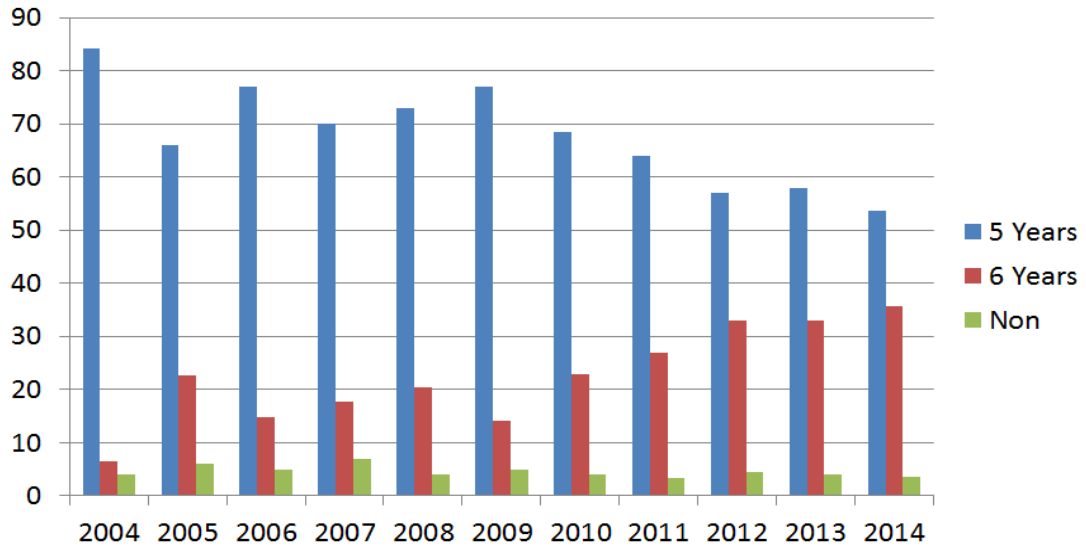
	March 2017	June 2017	Sept 2017	December 2017	March 2018
SAS	65	67	81	66	56
Other non-training	4	17	19	16	11
Total	**69**	**84**	**100**	**82**	**67**

(c) Training Programmes

Foundation Programme.

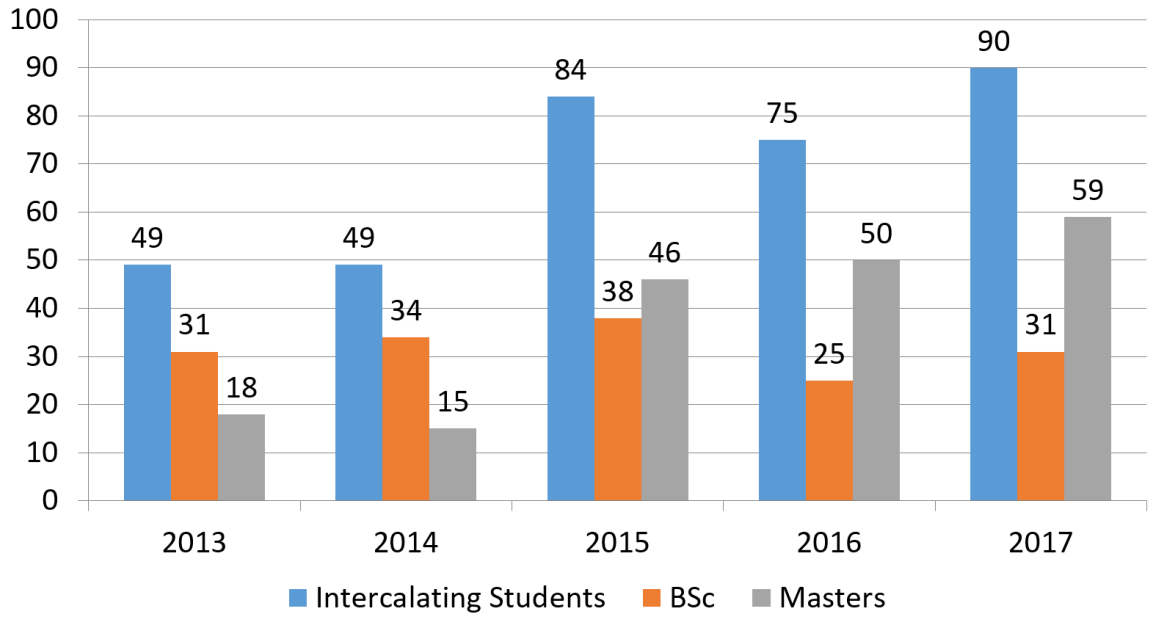
There are 252 posts at F1 and 252 posts at F2 in NI. Usually all the 252 posts at F1 are filled each year. There was a temporary expansion in the number of F1 posts in August 2016 to 267 in response to requests from the Western and Southern HSC Trusts. However, there were 14 places unfilled during that year. The overall number of F1 posts was reduced down to 252 for the training year 2017-18 when it became apparent that there was to be a reduced number of medical graduates from QUB in 2017 and an under-subscription for the NI Foundation School for 2017-18. In August 2017, there were 14 gaps at F1 despite the reduction in the number of F1 positions. The main reason for the under-subscription in 2017-18 was an increased length of time that medical students were spending at QUB medical school (Figures 19 and 20) and other UK medical schools as a result of undertaking intercalated Bachelor's (eg BSc) and Master's (eg MSc; Masters in Public Health; Masters in Global Health) degrees.

Figure 19: Percentage of students at QUB Medical School taking 5 or 6 years to complete course



(Non= non-completers at Medical School – approximately 4% of each cohort do not complete their programme of study)

Figure 20: Number of Intercalating Medical Students at QUB Medical School 2013-17



With regard to Foundation Year 2 posts, there has usually been a small vacancy rate of 4-6 places each year. In response to the expansion in F1 post in 2016-17 to 267, there was an expansion in F2 posts for 2017-18 to 267. Twenty posts at F2 have been unfilled during 2017-18. The number of F2 posts has been reduced to 252 for August 2018 start.

Therefore, it would appear that the current output from the QUB medical school in addition to applicants from other medical schools is just sufficient to fill 252 posts at F1 each year in NI.

GP Training Posts

When the number of new GP training places each year was set at 65, there were virtually never any vacancies in the NI GP training programme. With the rapid expansion in the programme, there was one vacancy in 2016/17 (when the number of places was increased to 85/year – due to a trainee leaving on Inter-Deanery Transfer), five in 2017/18 (when places increased to 97/year) and it seems very unlikely that it will be possible to fill all 111 funded GP training posts available in NI in 2018/19. (After withdrawals, at the end of Round 1 and Round 1b, 81 places have been filled; Round 2 has yet to commence).

Specialty Training Posts

There has been a rising number of vacancies in training posts in NI since 2012 – going from 83 in August 2013 to between 179 and 202 in the 2017/18 training year (Figure 21). Most of these vacancies have been in specialty training posts – particularly in the Core Medicine Training (CMT) programme, and affecting LAT posts in the Obstetrics and Gynaecology (O&G), Paediatrics (Paeds) and Emergency Medicine (EM) programmes (Figure 22).

Figure 21: Vacancies in Training Posts in NI August 2013 – February 2018

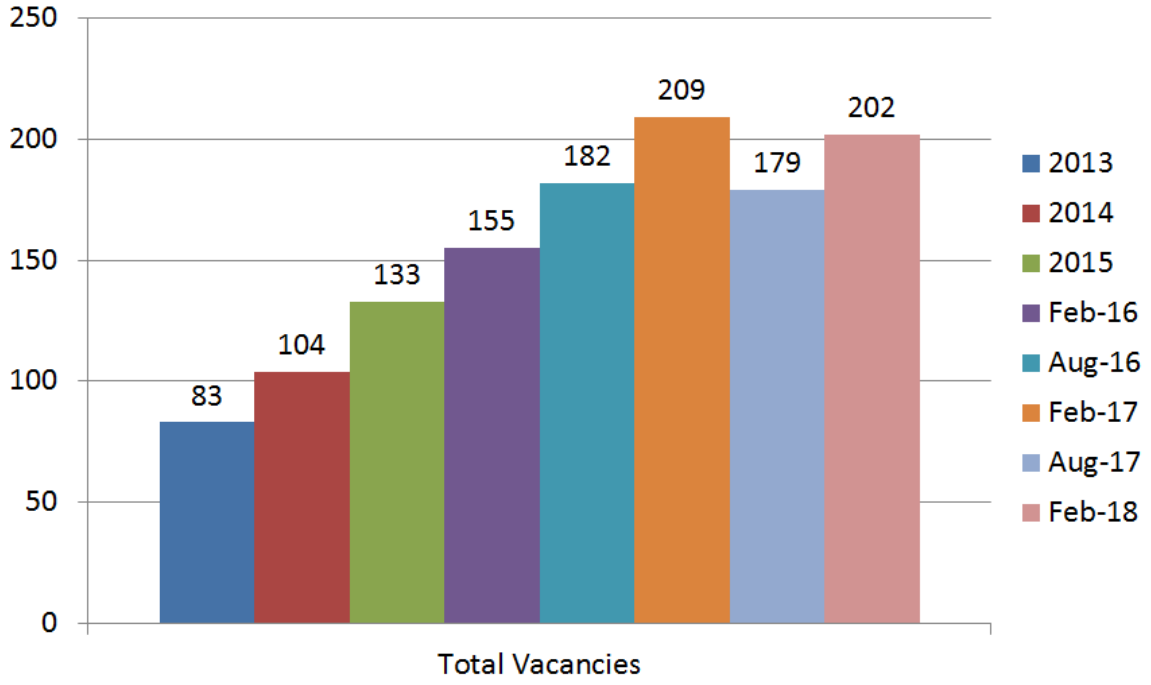
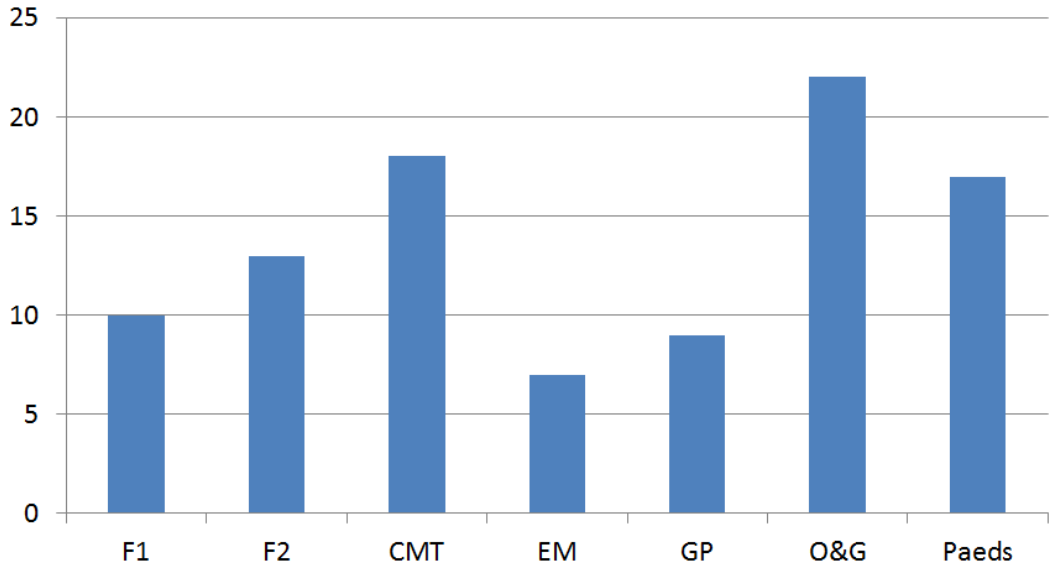


Figure 22: Vacancies in Training Posts in NI by Programme – February 2018



Factors contributing to this increased vacancy rate are:

1. Reducing numbers of doctors entering GP or Specialty training immediately after completing the NI Foundation Programme (Figures 23). The GMC has provided information on the percentage of doctors who have entered specialty or GP training after completing the Foundation Programme in NI (Figure 24).

2. Expansion of training post numbers – in response to workforce planning and to requests by HSC Trusts– funded partly by DoH and partly by HSC Trusts.
   A total of 82 new training posts have been created over a 3 year period in NI (Figure 25).
3. There has been no increase in the number of medical school places in NI over the last 9 years – with a reduction in the number of funded places for 'Home and EU applicants' from 2011.

The GMC reports that the reasons that doctors give for taking a break after Foundation are due to concerns about health and wellbeing (ill health, burnout and stress, feeling undervalued and disillusioned), uncertainty about their career, negative experience of their training, unsuccessful application to GP or specialty programme, personal circumstances and personal development.

Figure 23: Doctors in training and not in training 1 year post completion of NI Foundation Programme

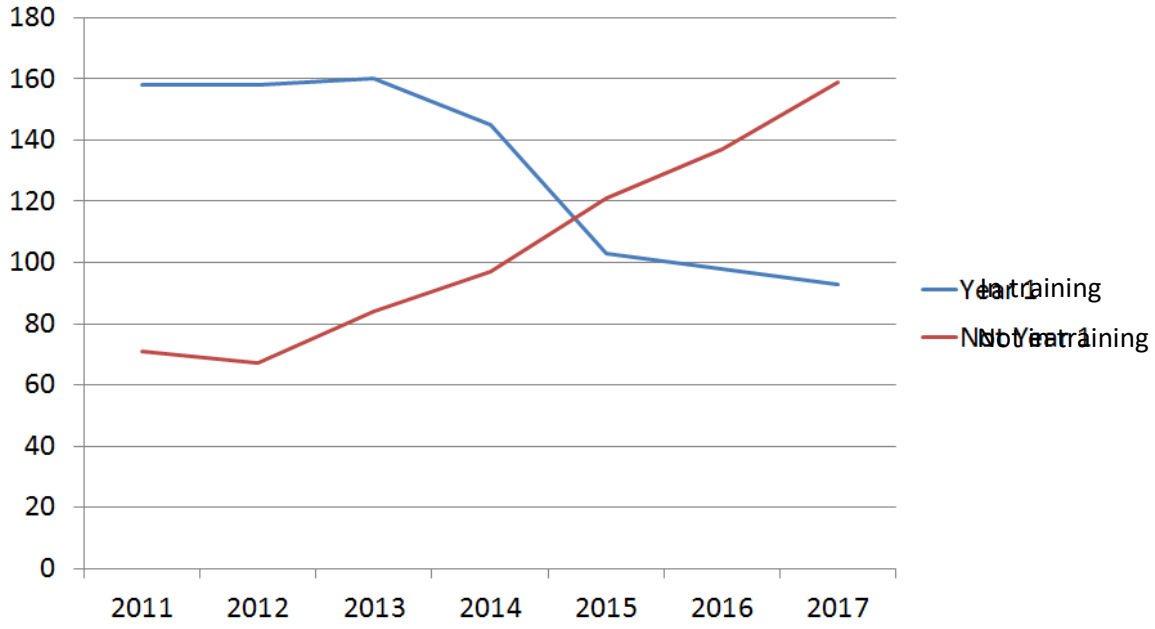


Figure 24: Doctors who have entered GP/Specialty training (%) – Years since completing F2 for doctors completing Foundation Programme in NI for years 2012-17.

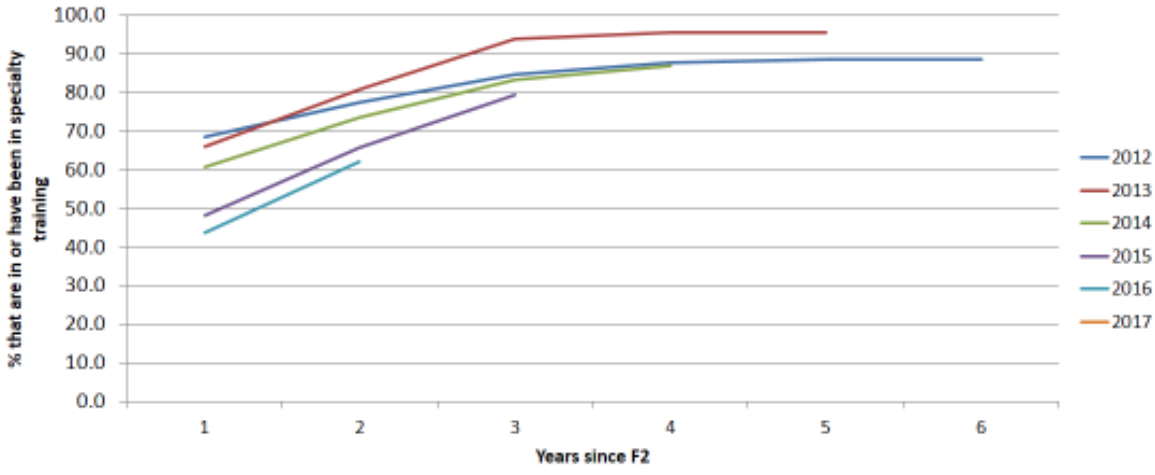
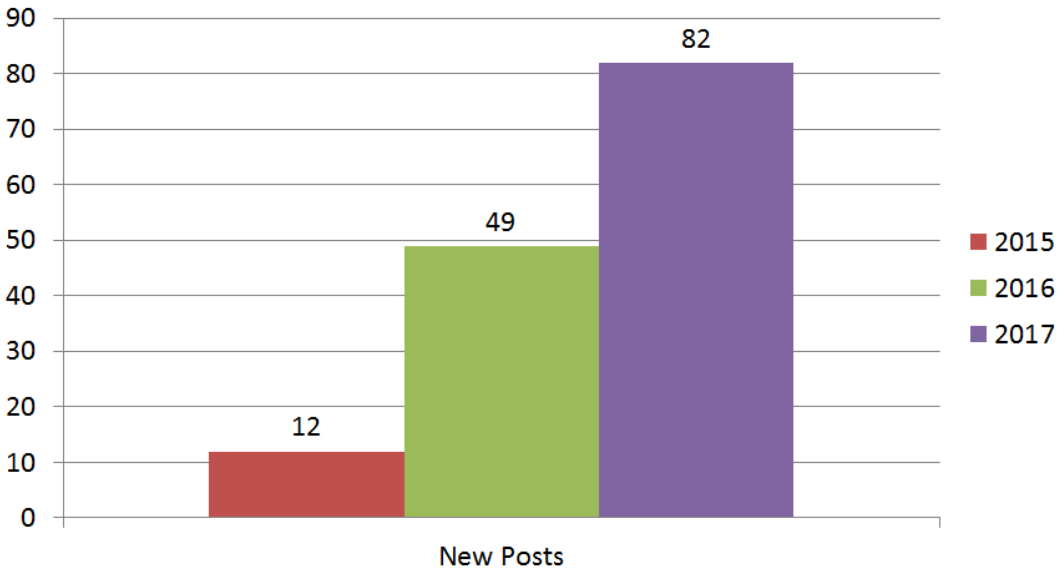


Figure 25: New Training Posts in NI – created 2015-17



How many doctors will be needed in NI in 2026?

The World Health Organisation (WHO) in 2016 (http://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf;jsessionid=63D9CC22556760FC18C488930824AC10?sequence=1) has identified a number of challenges in delivering high quality health care:

1. Inadequate investment including in the education and training of health workers
2. Inefficient use of resources exacerbated by limited understanding of workforce data
3. Shortages of skilled, motivated and supported health workers
4. Skill-mix imbalances resulting in inefficiencies
5. Mal-distribution of health care workforce especially in rural, remote and underserved areas
6. Inter-professional barriers to collaboration

Most of the challenges that the WHO has identified are also present in NI.

Workforce planning for healthcare staff should ideally take into account workforce requirements as a whole to address population and health system needs, rather than treating each profession separately so that issues of skill-mix and the relative supply of specialists and generalists are considered. The WHO has projected that there will be a global shortage of 2.3 million doctors by 2030. (http://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf;jsessionid=63D9CC22556760FC18C488930824AC10?sequence=1)

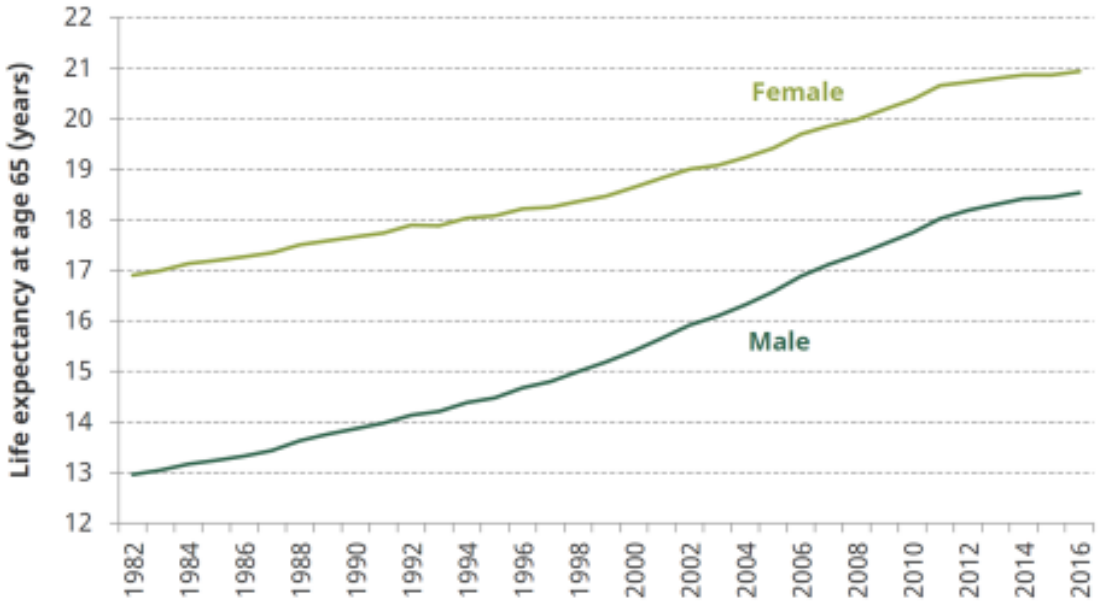
The Terms of Reference for this review (Appendix 1) identified a number of factors that should be considered in predicting the medical workforce needed in 2026 and beyond, including:

1. Demographic changes
2. Introduction of new treatments
3. Use of new technology
4. Changes in delivery of services (7-day services; evening access; shift left)
5. Changes in Professional Standards
6. Implications of Public Inquiries
7. Inequalities in health and healthcare provision
8. Medical Migration
9. Development of new roles within the healthcare workforce

(a) Demographics

The total life expectancy in the UK has been increasing between 1982 and 2016 (Institute of Fiscal Studies 2018). Much of the recent rise in life expectancy has come from increased longevity at older age groups (Figure 26).

Figure 26: Male and female life expectancy at age 65 in the UK



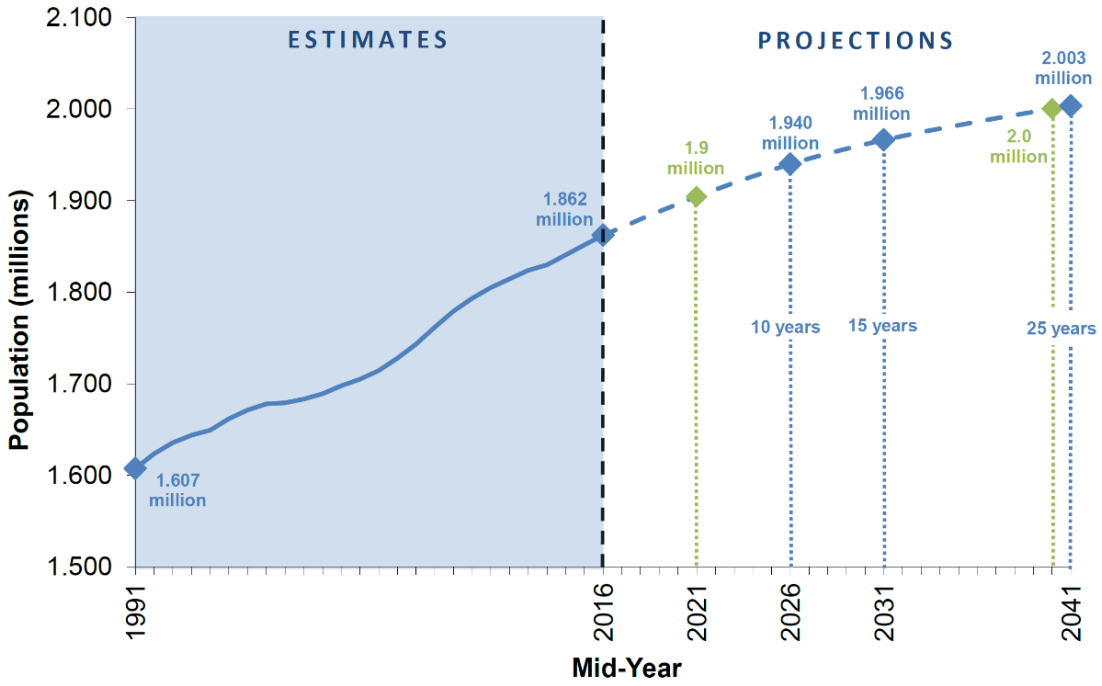
(Figure copied from the Institute of Fiscal Studies' publication- Securing the future: funding health and social care to the 2030s).

The Northern Ireland population is projected to reach 1.9 million by mid-2021 and 2 million by mid-2040 (NISRA Statistical Bulletin October 2017). The average annual growth rate is 0.3% mainly due to there being 127,300 more births than deaths (Figure 27).

The population of those who are aged 65 or over is projected by NISRA to increase by 65.1% between mid-2016 and mid-2041 so that by 2041, 24.5% of the population will be in this age category. The population who are aged 85 or over is projected to increase by 127.2% in this time period to reach 82,800 people (Figure 28). The increase in life expectancy and the bulge due to the 'baby boomer' generation will change the shape of the population pyramid for Northern Ireland to a more rectangular outline as the 'baby boomer' generation grow older (Figure 28).

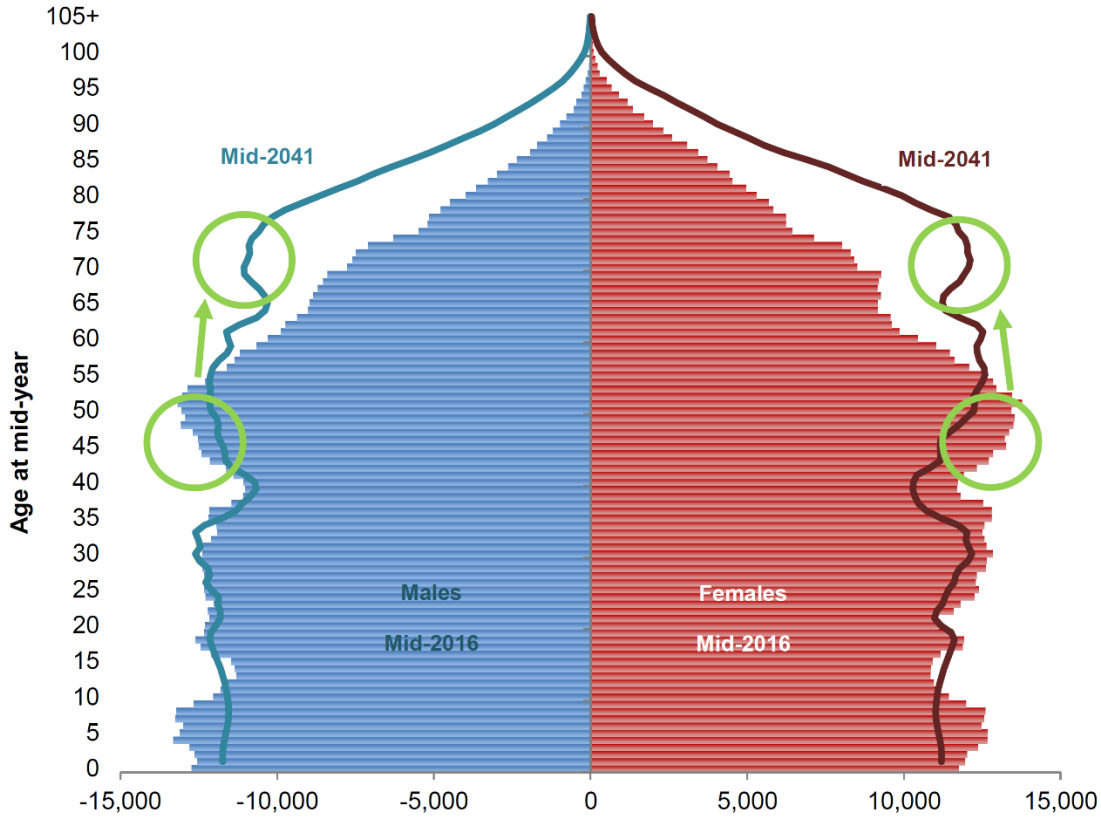
The rising size of the population, especially in the older age groups, points to a need for increasing numbers of people working in all healthcare professions to support healthcare delivery in NI.

Figure 27: Population of Northern Ireland, estimated and projected, mid-1991 to mid-2041



(Figure copied from NISRA Statistical Bulletin October 2017).

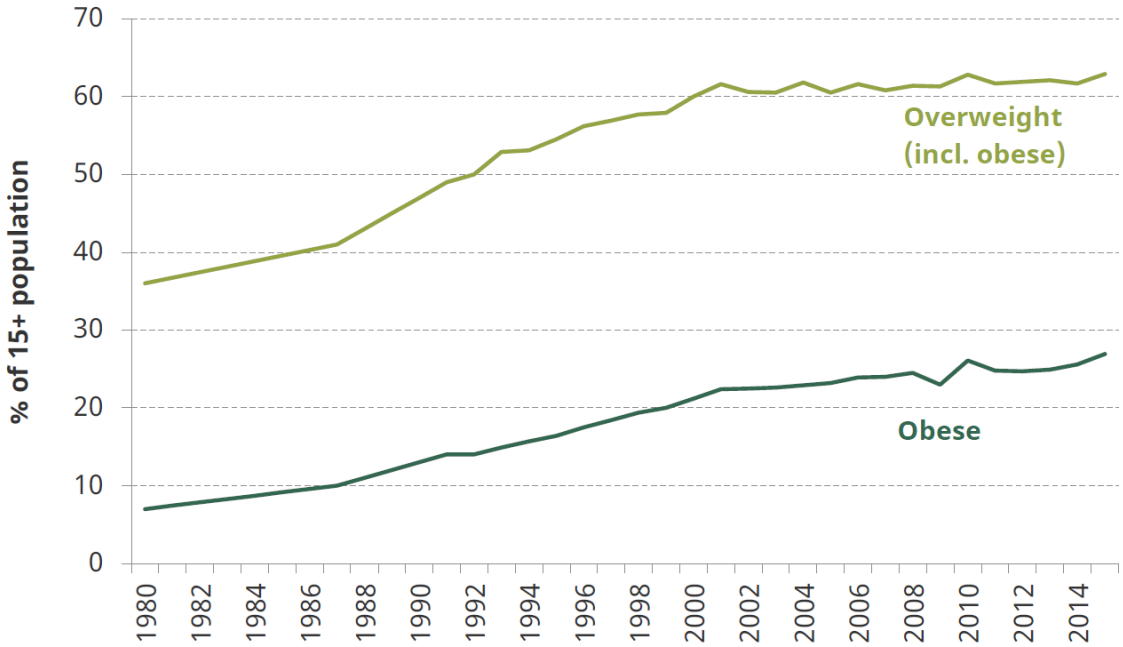
Figure 28: Estimated and projected population by age and sex, mid-2016 and mid-2041



(Figure copied from NISRA Statistical Bulletin October 2017- The green circles shows the bulge in the population due to the baby boomer generation and where the bulge will have reached in 2041).

In addition to increasing life expectancy and population size, there are also changes in the prevalence of disease. In 1980, 36% of the population were overweight and 7% were obese. By 2015, 63% were overweight and 25% were obese (Figure 29). Obesity is linked to an increased prevalence of a number of diseases including diabetes, hypertension, coronary artery disease and osteoarthritis.

Figure 29: Percentage of population aged 15 or over who are overweight (BMI>25) and obese (BMI>30).



(Figure copied from the Institute of Fiscal Studies' publication- Securing the future: funding health and social care to the 2030s).

(b) Demands on health and social care services

There has been a progressive increase in GP surgery consultation rates in primary care in NI between 2003 and 2013 (Figure 30) and in attendances at Emergency Medicine units in NI between 2007 and 2016 (Figure 31).

The average spending on health differs depending on age. Average spending on 65-year olds is estimated to be double that on 30-year olds (Institute of Fiscal Studies) and this ratio increases more sharply at older ages. The average spending on 85-year-olds is estimated to be five times and the average spending on 90-year-olds is almost eight times the spending on 30-year-olds (Figure 32).

Figure 30: Consultation rates in Primary Care in NI between 2003 and 2013.

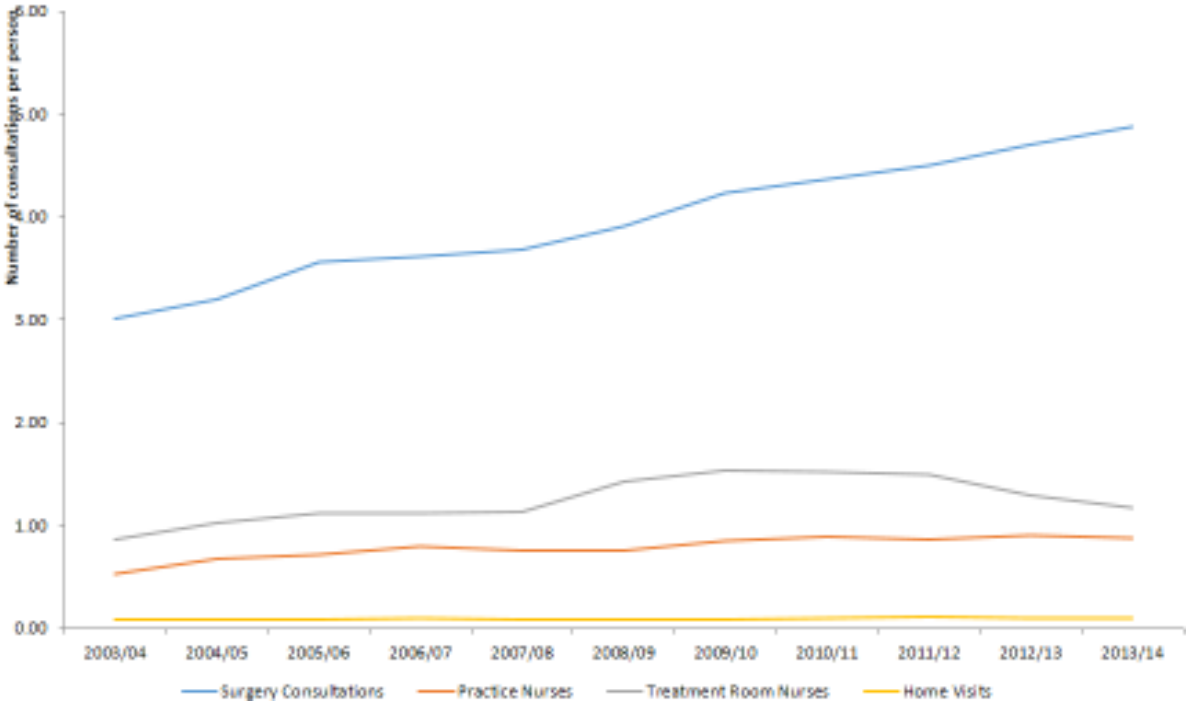


Figure 31: Attendances at Emergency Medicine units in NI between 2007/08 and 2016/17

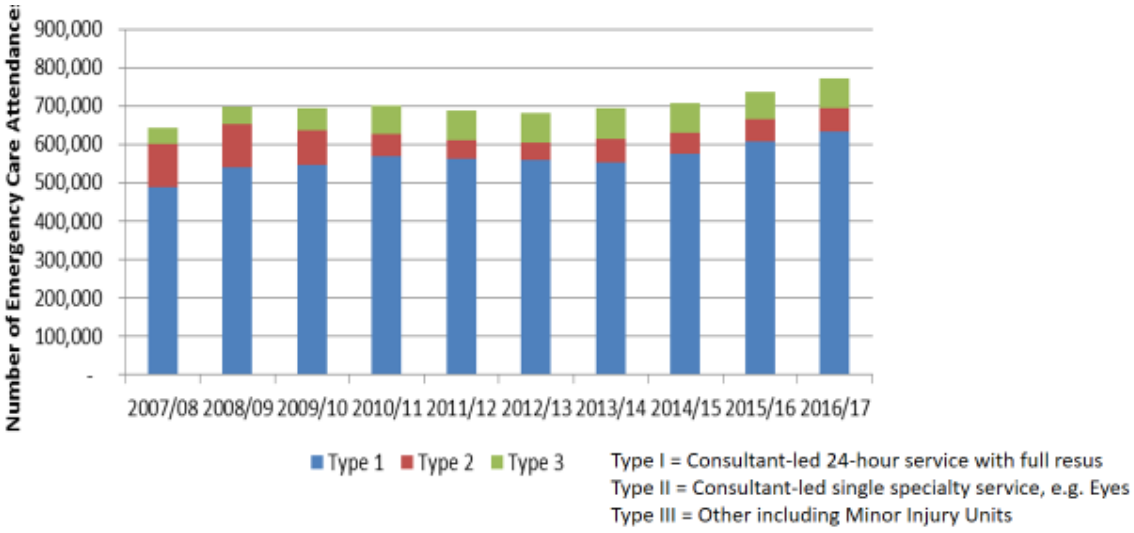
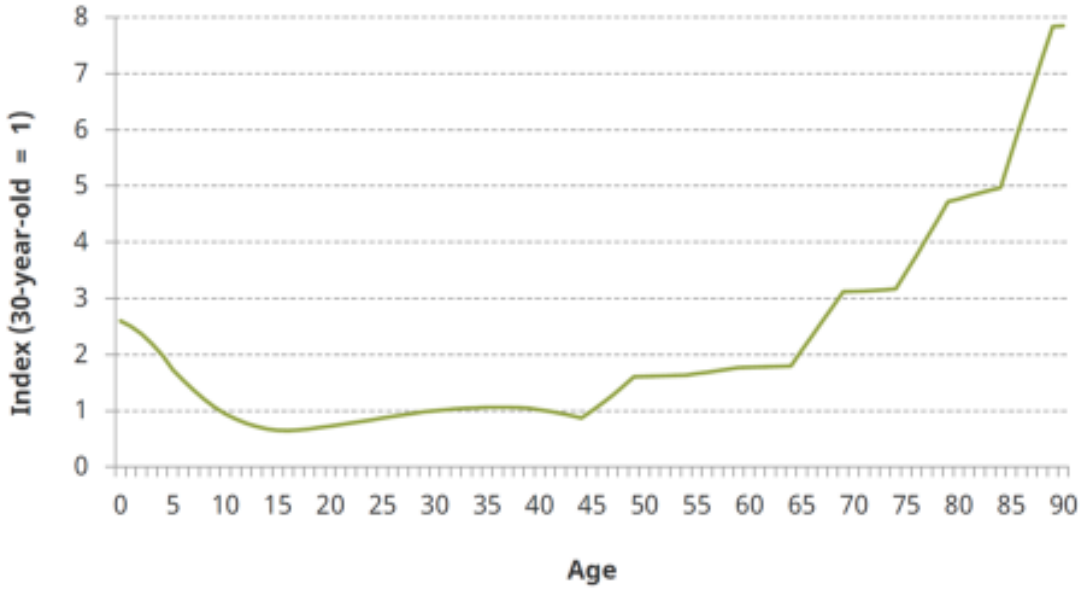


Figure 32: Age profile of UK public spending on health relative to a 30-year old



(Figure copied from the Institute of Fiscal Studies' publication- Securing the future: funding health and social care to the 2030s).

The rising demand on health care services in Northern Ireland has been reflected in the increasing number of medical staff that have been appointed as consultants and NCCGs in the hospital Trusts in NI as well as increasing gaps in medical workforce in GP despite an overall increase in the number of GPs. Between 2007 and 2017, there was a 38.8% increase in the number of consultants working in the HSC (Table 16).

Table 16: Number of consultant staff in post in HSC NI March 2007 – March 2017

	Consultant Staff in Post Count	Whole-time Equivalent
Mar-07	1250	1184.1
Mar-08	1289	1212.4
Mar-09	1328	1255.6
Mar-10	1357	1285.0
Mar-11	1389	1313.3
Mar-12	1476	1395.6
Mar-13	1522	1437.1
Mar-14	1594	1500.0
Mar-15	1635	1540.7
Mar-16	1679	1583.2
Mar-17	1736	1634.3

Increase in consultant numbers over 10 year period 38.8%

Yearly rise 3.9%

The work carried out for medical workforce planning in NI between 2014 and 2018 has shown that for the specialties examined (Trauma and Orthopaedics; Urology; Emergency Medicine; Paediatrics;

Anaesthetics and Intensive care; Neurology; Dermatology; and acute medical specialties - Acute Internal Medicine, Endocrinology, Gastroenterology, Geriatric Medicine, Respiratory Medicine and Rheumatology) there was predicted to be a need for an increase of 36% in number of specialists over an average of a 10-year period (Table 17). Doctors in these specialties represent approximately 38% of the consultant workforce in NI.

Table 17: Additional consultants required by the HSC in 2026 in selected specialties based on the work of the PHA Medical Workforce Planning Group

	Current Consultant workforce	Additional Consultants by 2026
Anaesthetics	240	49
Intensive Care	(inc in above)	15
Clinical Radiology	131	26
Dermatology	24	8.5
Emergency Medicine	65	42
Medical Specialties	209	86
Neurology	19	22
Occupational Medicine	15	0
Paediatrics	99	0
T & O	66	66
Urology	23	9
Total	891	323.5

36% increase required over approx 10 year period

The number of NCCGs working in the HSC has increased from 572 to 682 between 2007 and 2017. The number of vacancies for NCCGs has been in the range of 61 -118. The GMC register indicates that there are in the region of 881 NCCG doctors with an address in NI. Therefore is has been estimated that the need for NCCGs is currently 800. This is an increase of 228 doctors over an 11-year period from 2007 at a rate of 3.5% per year.

It is predicted that the need to increase the number of GPs will be in line with the rate at which the number of specialists and NCCGs is increasing, especially in view of the changing demographics of the population and the plans to provide increasingly more care in the community (Transforming Your Care).

(c) New treatments and new technologies

The impact of new treatments and new technologies was discussed with Stakeholders during engagement meetings as part of this Review (Appendix 3). While new technologies (eg electronic care records dictation software; use of artificial intelligence in radiology and pathology interpretation) may improve efficiency or improve accuracy, the increased medical workforce needs required to implement new diagnostic capabilities and novel therapeutic interventions would more than offset any efficiencies gained. Therefore it was felt that the need for doctors would not decline as a result of new treatments and technologies.

(d) Changes in the delivery of services

The impact of changes in the delivery of services on the number of doctors needed in NI was discussed with Stakeholders during engagement meetings as part of this Review (Appendix 3). While delivering services on fewer sites would reduce the number of on-call rotas that would be in place, it was not felt that this would have any impact on the number of doctors needed to deliver elective services. In addition, it was felt that the result of reducing the number of sites would be that the same number of doctors would be located on a reduced number of sites in order to facilitate 7-day services and enhancements in the quality of care delivered and training provided.

(e) Changes in Professional Standards and Implications of Public Inquiries

The impact of changes in professional standards and the implications of public inquiries on the number of doctors needed in NI was discussed with Stakeholders during engagement meetings as part of this Review (Appendix 3). Changes in professional standards have usually increased the need for doctors and the concerns regarding public inquiries were that they would discourage interest in medicine as a career. No group felt that there would be a need for fewer doctors.

(f) Inequalities in health and healthcare provision

This is a dilemma faced in many parts of the world. Options to address mal-distribution of doctors are listed in Table 18.

(g) Brexit and medical migration

The impact of Brexit on the number of doctors needed in NI was discussed with Stakeholders during engagement meetings as part of this Review (Appendix 3). It was recognised that NI is very dependent on doctors who gain their medical qualifications in UK and Ireland for its medical workforce. The GMC has shown no reduction in the number of EEA doctors in the UK since the announcement of Brexit. NI may end up with a unique status within the UK, with regard to the terms of Brexit, (due to its land border with Ireland) but until the final agreement is reached, it is not possible to predict the impact of Brexit on the medical workforce in NI. A medical degree obtained within NI has national and international currency. Increasing ease and reducing relative cost of travel, more favourable terms and conditions or better training, working conditions or opportunities in GB or internationally may result in an increased migration of NI domicile doctors out of NI.

(h) Impact of new roles or extended roles of other healthcare professionals

The impact of new healthcare roles or of extending the roles of other healthcare professionals on the number of doctors needed in NI was discussed with Stakeholders during engagement meetings as part of this Review (Appendix 3). The consensus view from these engagements was that new or extended roles would be complementing, rather than replacing, the role of doctors and that these new roles could improve the quality of care delivered.

What options are there to increase the input from the medical workforce in NI?

As identified above, there is an increasing demand for healthcare provision in NI and there has been an increase in funding to create additional training, NCCG and consultant posts. However, there has not been sufficient number of individuals applying for these posts who have demonstrated the required qualifications, attitudes, behaviours, knowledge and experience to fill the additional training and service posts. The result has been a rising number of vacancies in primary and secondary care.

There are a number of possible options available to address this shortfall in the medical workforce in NI (Table 18).

Table 18: Options to increase input from medical workforce in NI

Addressing Inflow	**Addressing Outflow**	**Addressing mal-distribution**	**Addressing inefficiency**
Increased number of funded medical student places in NI This will also require an increase in infrastructure funding and an increase in the number of funded clinical academic staff Additional considerations: (a) graduate entry could be offered as well as standard entry (b) limitations on the number of international student places (c) promotion of NI opportunities more effectively to NI Domiciles	**Improve retention of staff by reducing losses** due to (a) migration, (b) early retirement (c) resignations of HSC employees to undertake locum work Possible methods: 1. well managed organisation including manageable workloads 2. supportive supervision 3. continuing education and professional development opportunities 4. career development pathways	**Attract school leavers from underserved areas to study medicine**	**Improve efficiency of the medical workforce** by utilising doctors' knowledge and proficiencies across the full range of their skill set by addressing skill mix: (a) Physician's Associates (b) Pharmacists (c) Enhanced Nurse Practitioners (d) Advanced Nurse Practitioners (e) Allied Health Professionals
Increase the return of NI Domiciles to work	**Attract back to medical work**	**Deliver more of the medical teaching and**	**Improve quality of medical training**

in NI having graduated in medicine in GB or RoI	**previous HSC employees** who are undertaking locums, career breaks or have retired early	**training in underserved rural areas**	
Increase attractiveness of NI as a location to practise medicine to doctors who are GB, EEA and International domiciles (Ethical issues re IMGs)		**Retain doctors in underserved areas using non-pay incentive packages** (a) Family and lifestyle incentives (b) Hardship allowances (c) Housing and education allowances	**Provide a supportive environment for medical staff**

This review is focused on examining the number of medical student places that should be available in NI. However, it would also be of relevance to consider:

1. whether the students being enrolled to study medicine in NI are ones who have the
    a. values, attitudes and behaviours that the population and healthcare system of NI would expect
    b. mental and physical health, wellbeing and resilience that the population and healthcare system of NI needs of its future doctors. The GMC is currently revising its guidance (Gateways to the professions) which supports disabled students to access a career in medicine. This revised guidance (Welcomed and Valued) is currently being consulted upon and its implications will subsequently need to be considered.
2. whether the students being enrolled to study medicine in NI are ones that will be motivated
    a. to seek employment and to deliver high quality health care in NI long term
    b. to train and work in the medical specialties which the population of NI needs
    c. to train and work in underserved areas of NI
3. whether the undergraduate medical education delivered in NI will
    a. equip its graduates with the knowledge, skills and experience that they need to progress and succeed in postgraduate medical training
    b. promote among its graduates the professionalism expected of doctors working in NI
    c. promote among its graduates the motivation to seek employment and to deliver high quality healthcare in NI long term
    d. promote among its graduates the interest in working in the medical specialties that the population of NI needs
    e. promote among its graduates the interest in working in underserved areas of NI

How to calculate the number of doctors needed in 2026?

If the rate of growth of specialists in NI remains in the region of 3.8% per year until 2026, then the number of specialists needed in 2026 would be 2488. Using a similar approach with regard to NCCGs, with an expected growth in numbers from the current estimated need of 800 at a rate of 3.5% until 2026, then the total number of NCCGs needed in 2026 would be 1024. It has been harder to estimate the actual size of the current deficit of GPs in NI as an appropriate ratio of the number of GPs/population has not been agreed. However, it has been accepted that the number of new GP trainees needed currently is 111/year and the attrition rate for GP training is less than 2%. Therefore calculations of the need for GPs in this Review are based on a predicted 3.5% increase/year in the need for new GP training posts.

Who studies medicine in NI?

There is currently one medical school in NI – based at Queen's University Belfast (QUB). The QUB medical school course is a standard-entry 5-year course. There are currently 236 funded places at the school which are open to 'Home and EU' applicants and 26 places open to international students. Prior to 2011, there had been 250 funded places open to UK and EEA applicants. Whenever the DoH reduced the number of funded places for UK and EU applicants from 250 to 236, QUB was allowed to maintain the overall number of students at 262 and increase the international places from 12 to 26. It is possible for qualified dentists to be admitted into the second year of the course, however this is usually a very small number. The school also accepts on average 9 students each year from the International Medical University (IMU) in Malaysia into third year. The total number of students starting medicine at QUB medical school each year has been very steady at between 265 and 276 each year over the last 9 years (median 271- ie 236 'Home and EU'; 26 International; 9 IMU)(Table 19).

Table 19: QUB Medicine Admission Statistics 2010 -2018

		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-2018
Profile of Students Admitted to first year	Total Admitted	265	271	269	272	276	275	273	271
	Local NI	207	191	184	186	186	152	166	190
	Local GB	22	34	42	39	48	73	52	34
	ROI or EU	18	11	9 (+ 1 IOM)	10 (8+2 IOM)	2	10	17 (+1 ISLAND)	11 (+ 1 ISLAND)
	Overseas	12	25	25	25	26	26	26	26
Admitted high up the course	Dentists to 2nd year	1	2	0	1	0	1	2	0
	IMU to third year	5	8	8	10 (+ 1 local)	14	13	9	9

The domicile of the entrants to QUB Medical School is shown in Figure 33. There had been an increase in the number of GB students entering the QUB Medical School between 2010 and 2015. There was then a change in QUB Medical School admissions policy (arrowed) such that of those who were applying for a second time for entry on the basis of either A-level results or as a graduate

would only be considered if QUB was one of the Medical choices when they had made their first application. There is a female preponderance in the entrants to medicine at QUB ranging from 55.8-67.5% (Figure 34). However the percentage of female entrants to QUB Medical School closely correlates with the % female applicants (Figure 35).

Figure 33: Domicile of Entrants to QUB Medical School 2010-17

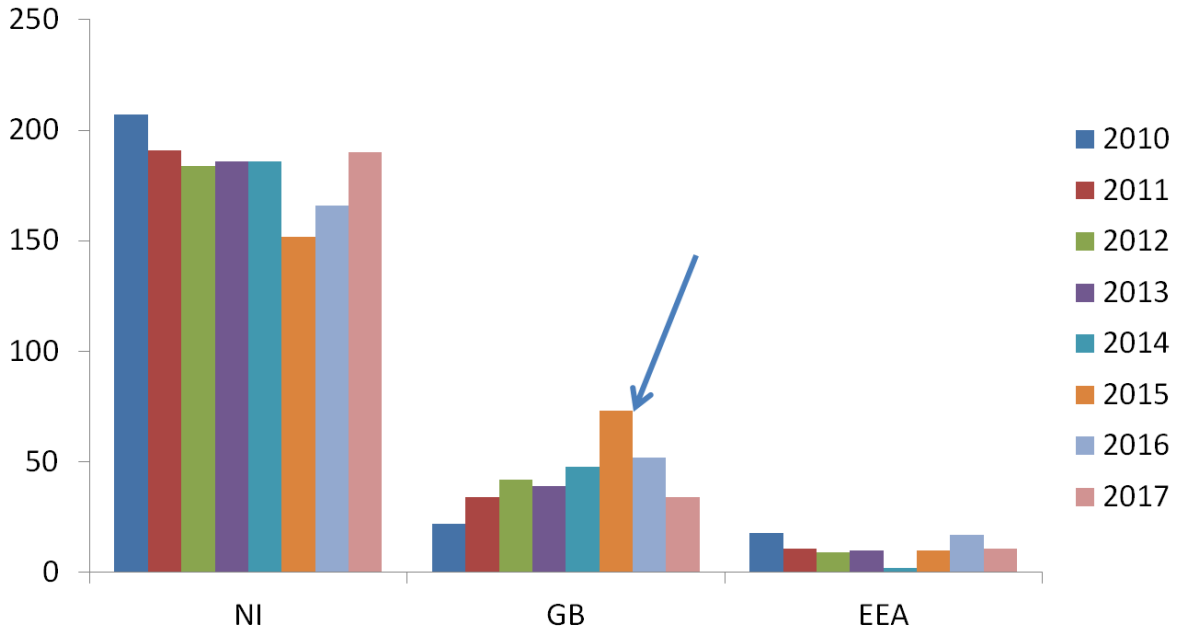


Figure 34: QUB Medical School Intake by gender 2009-17

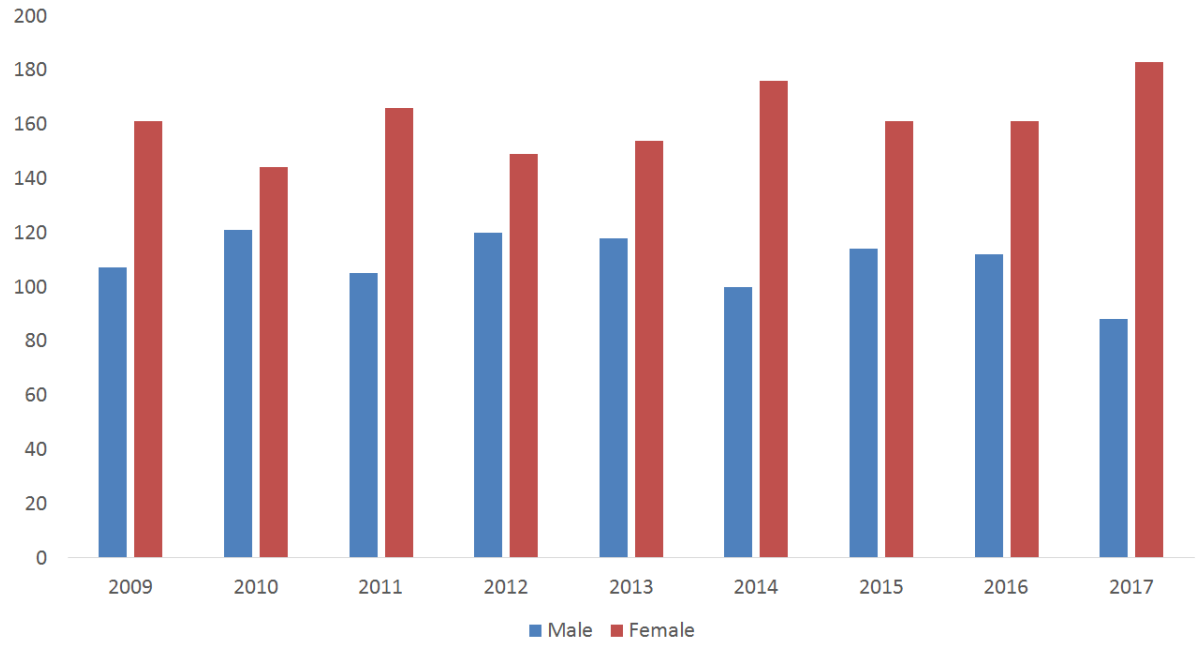
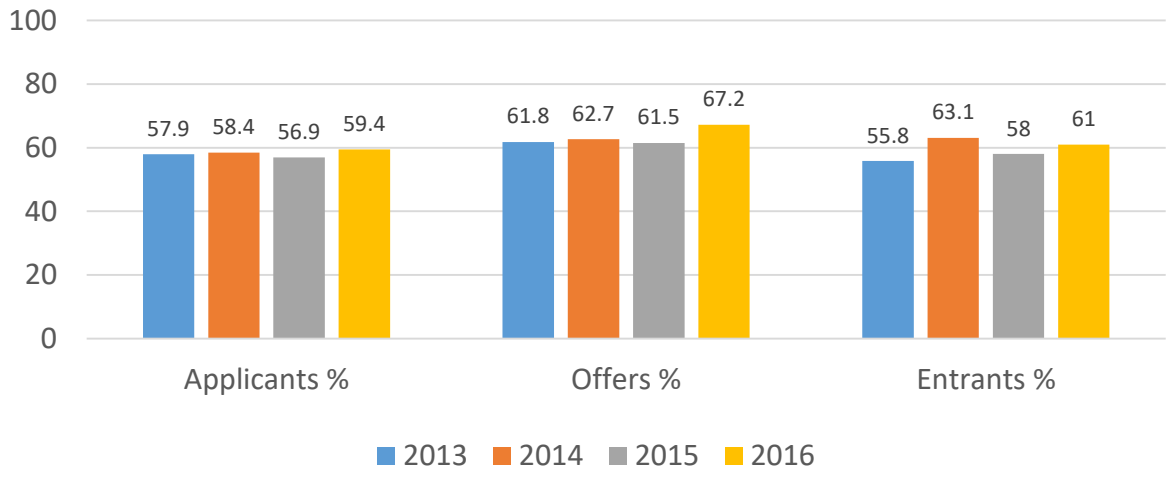
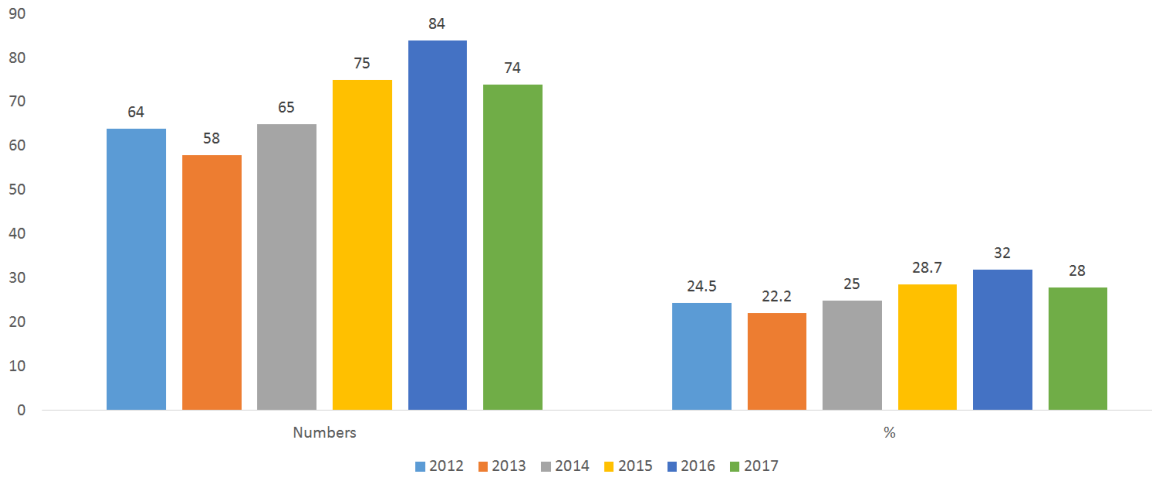


Figure 35: QUB Medical School Applicants and Entrants – Female % 2013-16



Most students are 18 or 19 at entry to QUB Medical School but there has been a modest rise in the percentage of students who are 21 or 22 in both male and female cohorts. This is likely to be mainly related to an increasing proportion of students at entry already having completed an undergraduate degree (Figure 36).

Figure 36: QUB Medical School Entrants with a previous degree 2012 -17 – numbers and percentage



Although a 5 year course, the percentage of students who are taking 6 years to complete the course has increased (Figure 19). However, rather than being related to increased difficulties with progression between years, this is mostly due to an increased number of medical students who are taking a year out of their medical course to complete an intercalated Bachelor's or Master's degree (Figure 20).

There is a very small non-completion rate for the medical course at QUB – at approximately 4% (Figure 19).

How dependent are NI healthcare services on QUB Medical School Graduates?

Of the 6086 doctors listed on the GMC data explorer in April 2018 as working in NI (https://data.gmc-uk.org/gmcdata/home/#/reports/The%20Register/Stats/report), 4221 (69.4%) graduated from QUB:

- 74.7% of trainees,
- 73.9% of GPs,
- 67.7% of specialists and
- 57.7% of non-consultant non-training doctors.

From the same data source, the specialty with the lowest dependence on QUB graduates was paediatrics and the most dependent were medical specialties and psychiatry (Table 20).

Table 20: Specialists in NI and percentages who graduated from QUB Medical School

	Registered Specialist	Registered Specialists who graduated from QUB	% Graduated from QUB
Anaesthetics	285	187	65.6
Emergency Medicine	80	52	65
Medicine	512	376	73.4
Obstetrics & Gynaecology	118	72	61
Paediatrics	120	67	55.8
Pathology	79	56	70.8
Psychiatry	206	152	73.7
Radiology	172	117	68
Surgery	311	205	65.9

Looking at the GMC SOMEP 2017 data, the percentage of trainees in NI who obtained their primary medical qualification at QUB ranged from 68.7 to 72.7% over the last 6 years (Figure 37-39). For trainee populations, the percentages attending QUB Medical School were

- Foundation trainees - 71.3% - 81.8%;
- GP trainees - 70.5 – 78.8%
- Core trainees (Anaesthetics; Emergency Medicine; Medicine; Psychiatry; Surgery) - 64% - 74.5%.

For run-through and higher specialty programmes the pattern of dependence on QUB graduates is more variable with the least dependent being the higher programmes in surgery and radiology and the most dependent being higher programmes in psychiatry, anaesthetics and paediatrics.

Figure 37: Total number of NI trainees (2012-2017) and the number who graduated from QUB Medical School

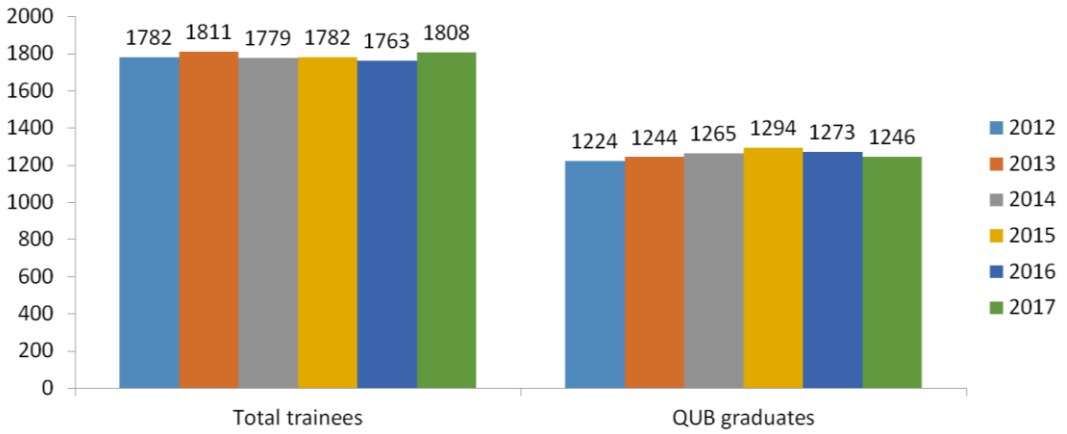


Figure 38: Total number of NI Foundation, GP and Core Training Programmes (2012-17) and the number who graduated from QUB Medical School

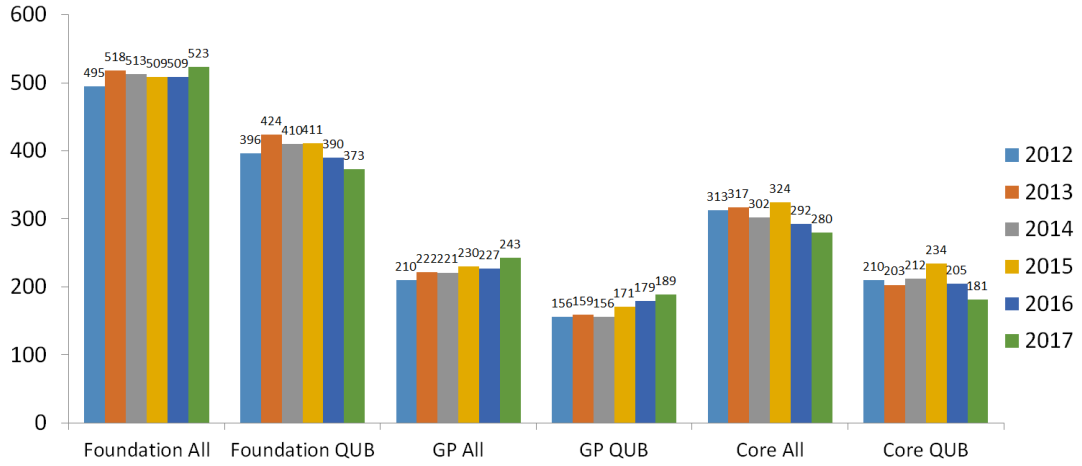
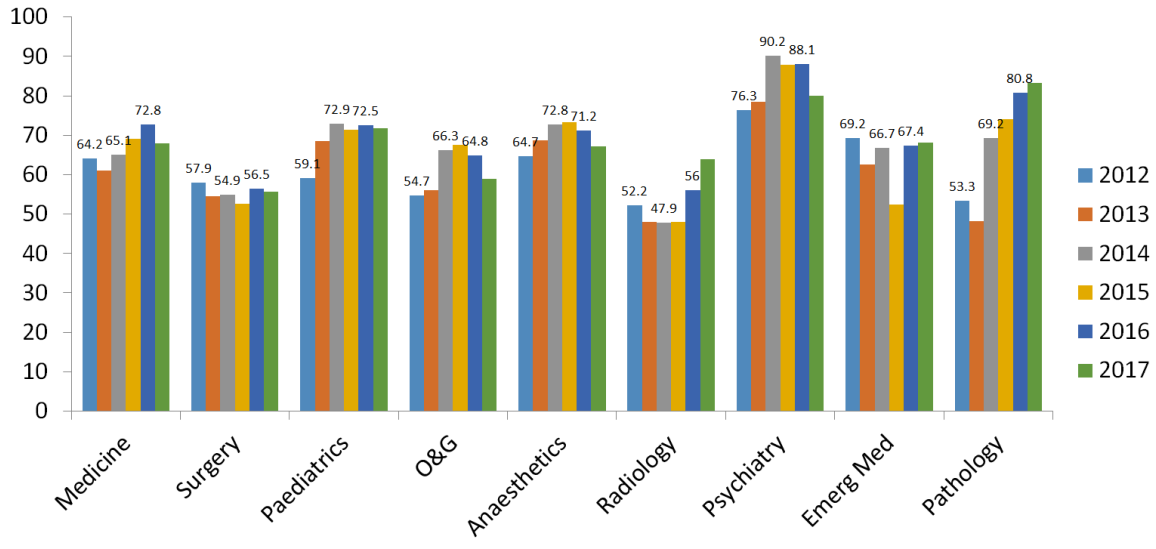


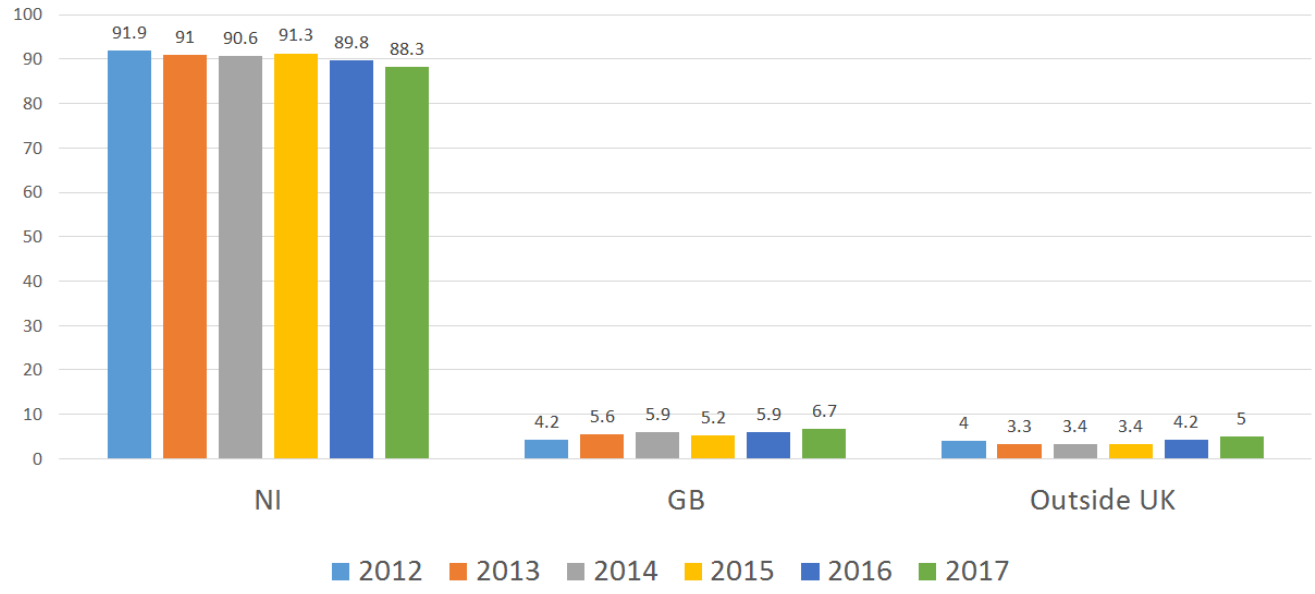
Figure 39: Percentage of trainees on NIMDTA Specialty Programmes (2012-17) who graduated from QUB Medical School



How dependent are NI healthcare services on NI Domicile doctors?

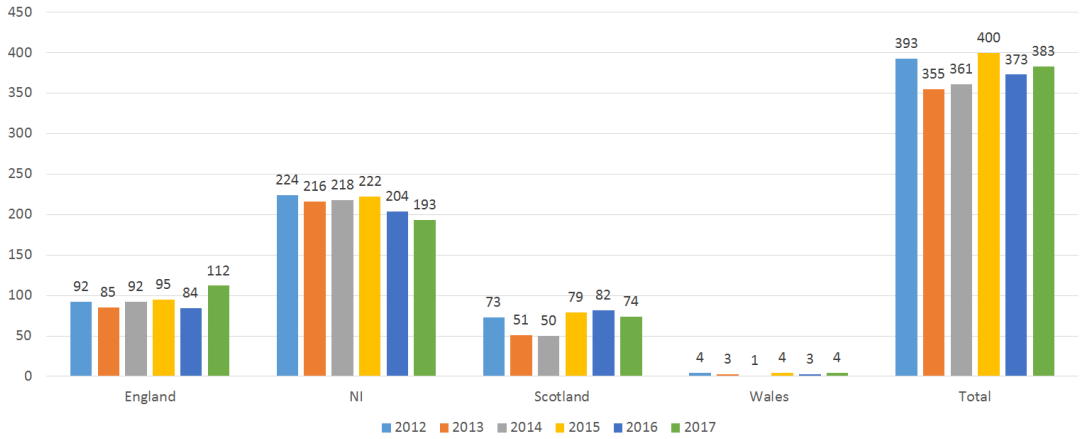
Overall, for years 2012-17 on average 90.5% trainees enrolled on NI training programmes are NI Domiciles (Figure 40).

Figure 40: Domicile status of doctors in training on NI training programmes (%)



The Foundation year 1 destinations for training of NI domiciles who are UK medical graduates are shown in Figure 41. Figure 41 illustrates that there are between 355-400 F1 doctors each year in the UK from a NI Domicile background (mean 373) of which between 50.4% and 60.8% train on the NI Foundation Training Programme. On average 84.5% Foundation year 1 trainees in NI are NI domiciles.

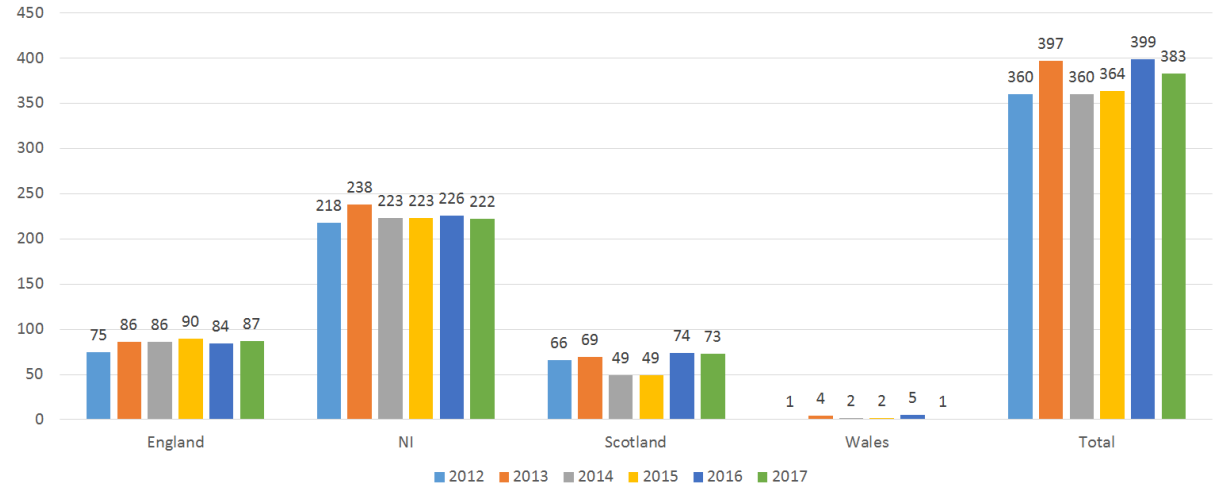
Figure 41: F1 Destinations of medical graduates who are NI Domiciles 2012 - 17



For the second year of Foundation training, NI domiciles who are UK graduates are training as shown in Figure 42. This figure shows that there are between 360 – 399 F2 doctors each year in the UK

from a NI Domicile background (mean 377) of which between 58% and 61.9% train on the NI Foundation Training Programme. On average 86.8% Foundation year 2 trainees in NI are NI domiciles.

Figure 42: F2 Destinations of medical graduates who are NI Domiciles 2012-17



Data from the Department for the Economy in NI, relating to student loans, shows that there are as many NI domiciles studying medicine in GB as there are in NI (Table 21). The mean number of students studying medicine in GB is 864 and assuming they are undertaking a 5-year standard entry course, there are a mean of 172/year starting to study medicine in GB each year. This is likely to be an underestimate as there will be students who do not seek a student loan.

Table 21: NI Medical Students Studying for a Medicine Degree in GB

	Country of HEI			
Academic Year	**ENGLAND**	**SCOTLAND**	**WALES**	**Grand Total**
2012	467	374	32	873
2013	456	401	34	891
2014	434	403	31	868
2015	476	362	30	868
2016	457	330	34	821
Grand Total	**2,290**	**1,870**	**161**	**4,321**

(HEI = Higher Education Institution)

In 2017, 380 NI domiciles commenced a medical degree course in the UK: 190 in NI and 190 in GB.

Data supplied from the GMC indicates that on average 378 NI domiciles (range 312 – 441) entered a course at a medical school in the UK/year between 2003- 2015 (Table 22).

Table 22: NI Domiciles entering Medical School in the UK 2003 -2015

Entry Year	Course Type						
	Foundation Course	Graduate Entry Programme	Medicine with a Gateway Year	Medicine with a Preliminary Year	Standard Entry Medicine	Unknown	Total
2003	0	8	1	1	344	8	362
2004	0	1	0	1	393	7	402
2005	0	7	0	0	393	9	409
2006	1	7	3	2	400	3	416
2007	0	5	2	3	368	5	383
2008	2	6	1	12	369	0	390
2009	0	6	0	16	376	1	399
2010	3	10	2	26	381	0	422
2011	1	6	1	34	398	1	441
2012	0	5	2	33	317	3	360
2013	1	4	1	21	327	3	357
2014	3	3	0	16	302	0	324
2015	3	4	0	21	284	0	312

Data shown in Figure 41 indicates that on average 373 NI domiciles (range 355-400) are undertaking the year 1 of the Foundation programme each year in a UK Foundation School and data from Figure 42 shows that on average 377 NI domiciles are undertaking the year 2 of the Foundation programme each year in a UK Foundation School. These data provide triangulation regarding the number of NI domiciles who are following a medical career pathway each year.

NI domiciles who attend QUB Medical School are much more likely to enter the Northern Ireland Foundation School than either GB or International domiciles who attend QUB (UKMED data)(Figures 43-45).

Figure 43: NI Domiciles who attended QUB Medical School and where they undertook Foundation (Data shown include F1 and F2 doctors)

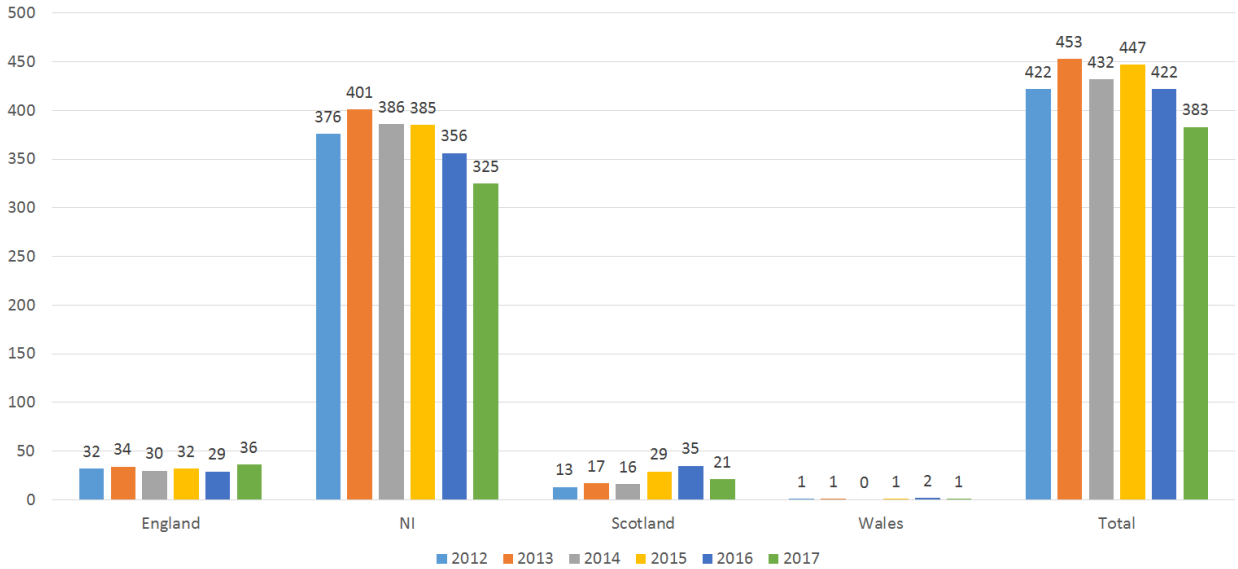


Figure 44: GB Domiciles who attended QUB Medical School and where they undertook Foundation (Data shown include F1 and F2 doctors)

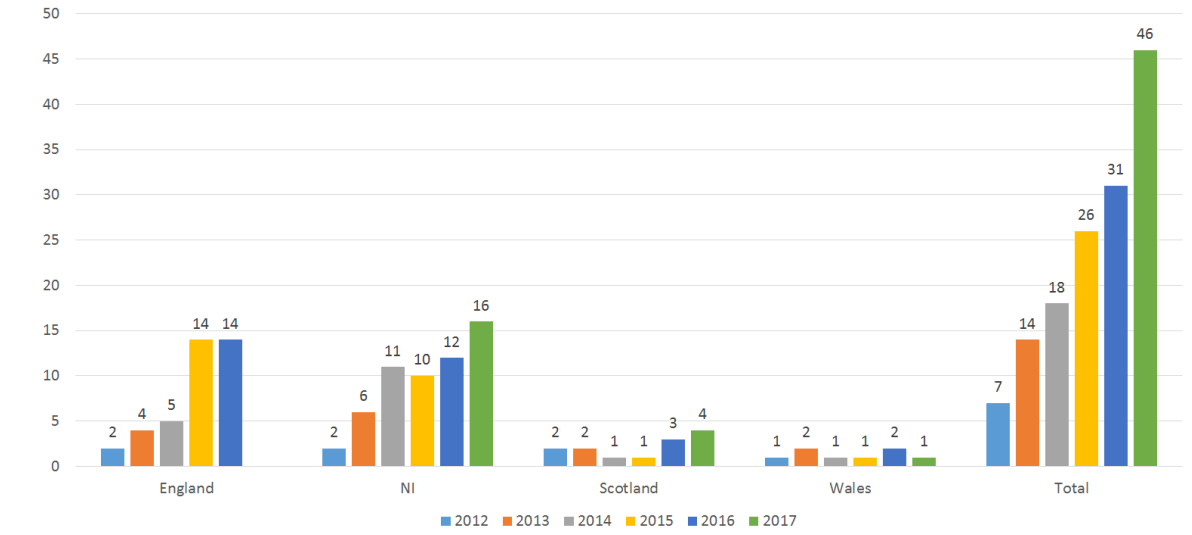
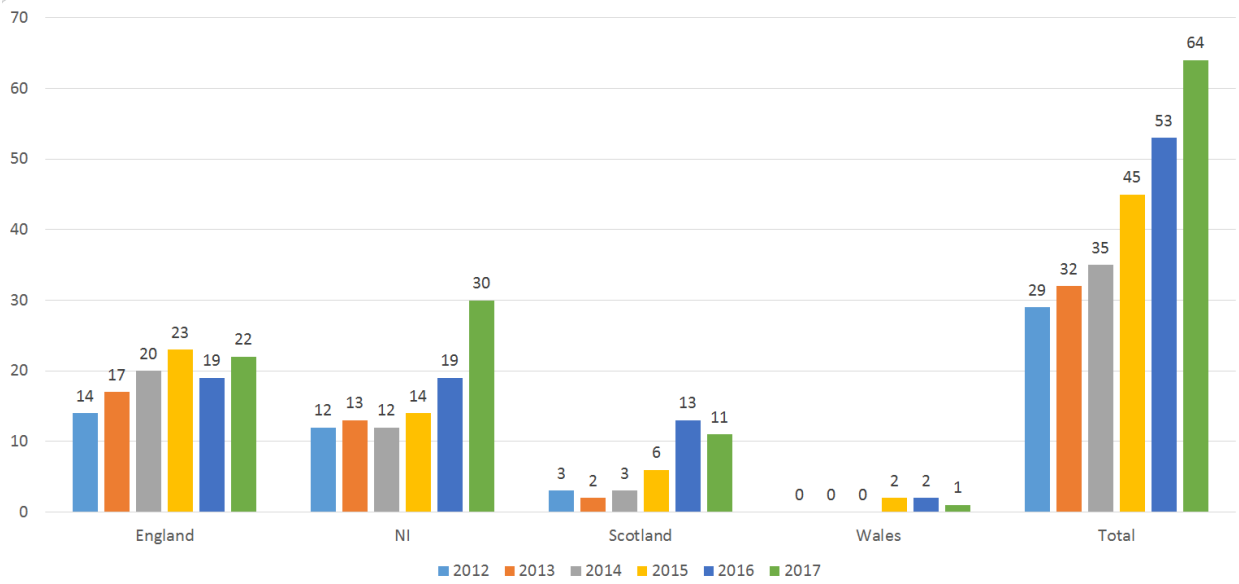


Figure 45: International Domiciles who attended QUB Medical School and where they undertook Foundation (Data shown include F1 and F2 doctors)

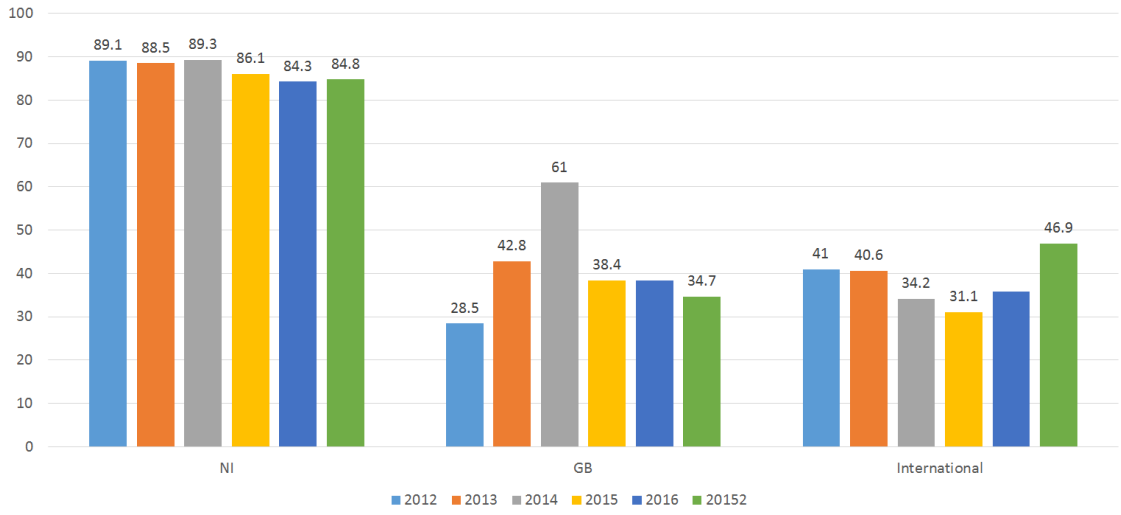


The information from these three figures is summarised as % progression from QUB Medical School to the NI Foundation School as categorised by domicile (Figure 46). Analysing this data by domicile, shows on average that

- 86% NI domiciles
- 42% GB domiciles
- 33% International domiciles

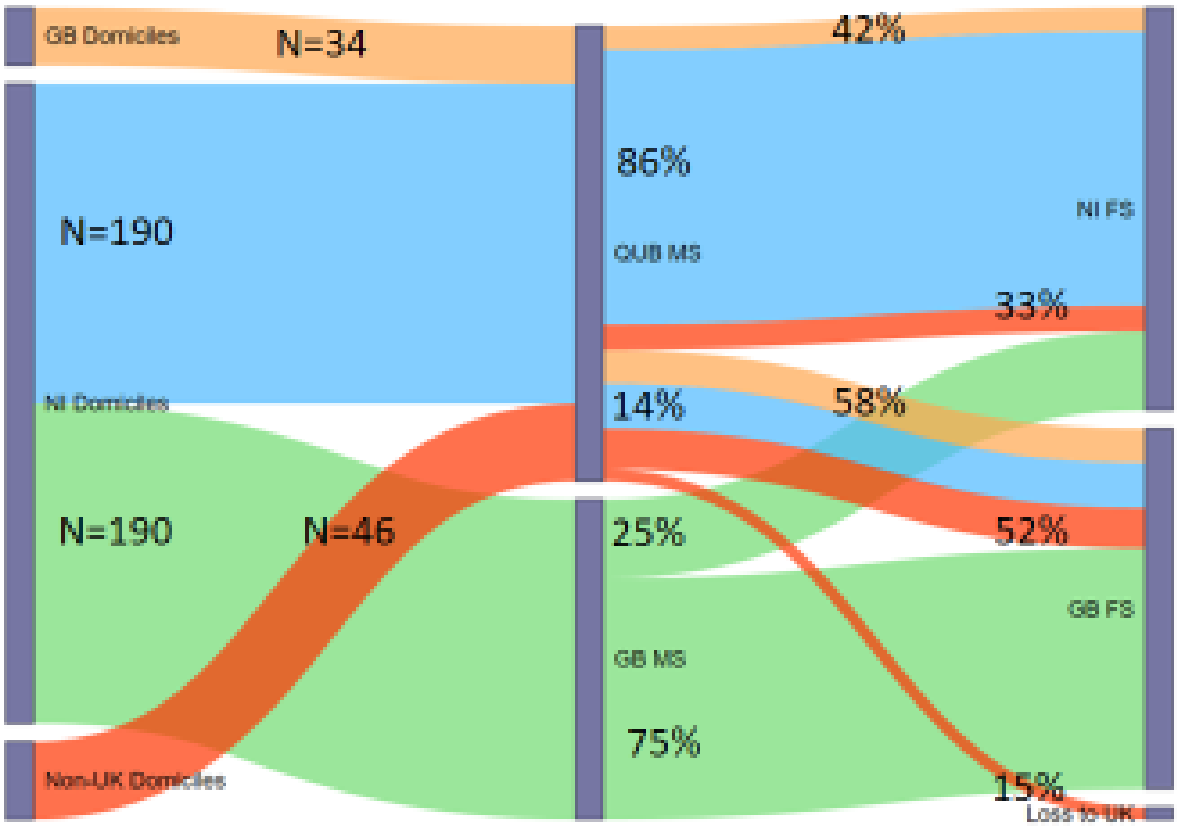
who attended QUB Medical School went on to train at the NI Foundation School.

Figure 46: Percentage QUB Graduates attending NI Foundation by Domicile



This data is illustrated by flows of medical students and medical graduates in Figure 47.

Figure 47: Flow of NI domiciles to QUB and GB Medical Schools and to NI and GB Foundation Schools



(data for entrants to medical schools based on 2017; data for entrants to Foundation schools based on average data for last 5 years)

There are on average 380 NI domiciles entering UK medical schools each year – of which approximately 50% enter QUB and 50% enter other UK medical Schools. Of the NI domiciles who attend QUB, 86% on average remain in NI for their Foundation School and 14% enter Foundation training in GB. Of the NI domiciles who attend medical schools in GB, 75% remain in GB for their Foundation training on average and 25% return to NI to enter the NI Foundation School.

What career pathways do medical graduates follow?

Following graduation, as indicated above, almost all of those from a UK domicile background will enter and complete a Foundation Programme in the UK. The Foundation Programme is overseen by the UK Foundation Programme Office and recruitment to the programme is national and is coordinated through Oriel. In 2018, there were 7551 posts on the Foundation Programme available across the UK with 7859 applicants from UK medical schools (either within the UK or overseas). Usually there are approximately 7% withdrawals during the application and recruitment processes and it is expected that there will be a small under-subscription of the Foundation Programme during 2018. In NI, there was under-subscription in 2017/2018 – 240 posts out of 252 filled. It is expected that most of the available 252 posts will be filled during 2018/19. There is a very low attrition rate during the Foundation Programme (Table 23).

Table 23: Attrition Rate in the NI Foundation Programme 2013 - 17

NIFS Attrition	Foundation Year One			
Year	*Total Completed Training	Completed After Ext	Required ext F1	Did Not Complete Foundation Year
2013	246	0	3	7
2014	248	4	2	7
2015	247	2	3	7
2016	245	0	0	5
2017	258	0	1	1

Attrition Rate F1 mean 5/252 2%

NIFS Attrition	Foundation Year Two			
Year	Total Completed Training	Completed After Ext	Required ext F2	Did Not Complete Foundation Year
2013	256	4	1	7
2014	252	3	1	10
2015	259	0	0	9
2016	245	7	3	15
2017	260	0	1	7

Attrition Rate F2 mean 9/252 3.6%

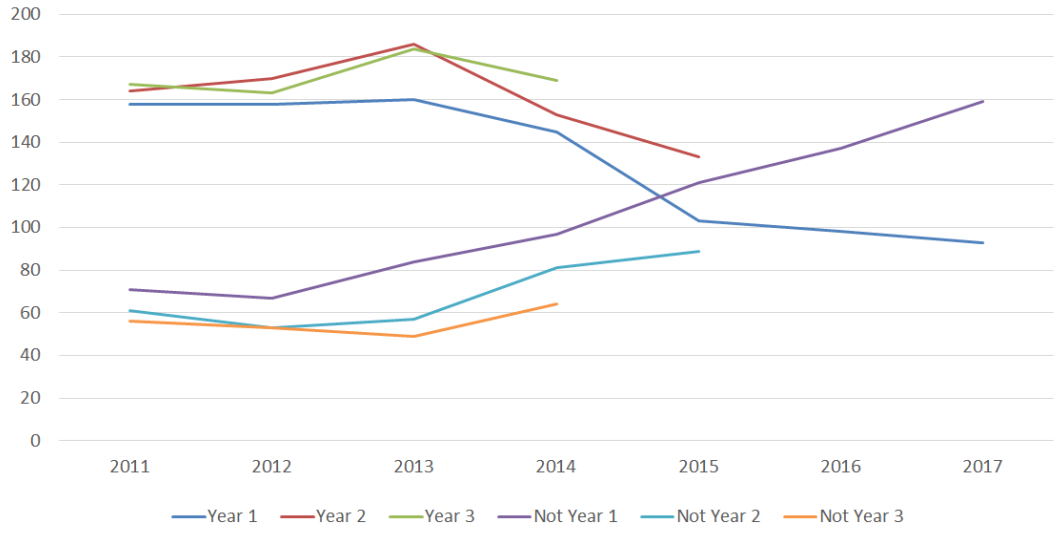
Doctors are often taking a break after completion of the Foundation Programme. This has increased each year since 2012 in all countries in the UK. The latest figures for 2017 are shown in Table 24.

Table 24: Destination of Foundation Leavers – NI and UK 2017

	NI (%)	UK (%)
Specialty Training	36.8	42.6
Service post in UK	47.4	34.9
Outside UK	6.7	5.4
Career Break	6.7	13.8

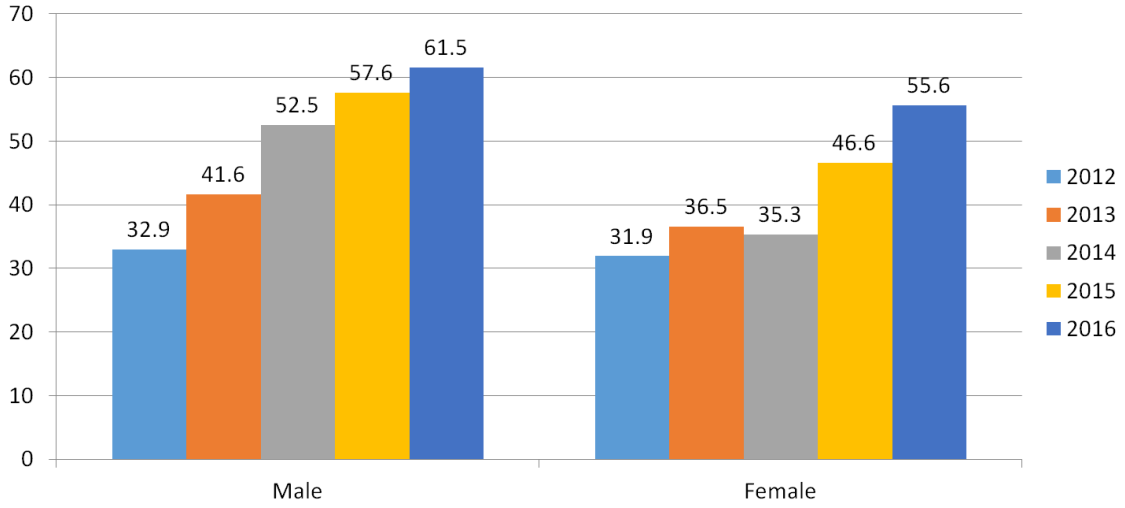
There are now more doctors who complete their Foundation training in NI who are taking a break in training than the number who are continuing directly into GP or specialty training (Figure 48).

Figure 48: Doctors in training and not in training 1, 2 and 3 years post completion Foundation in NI



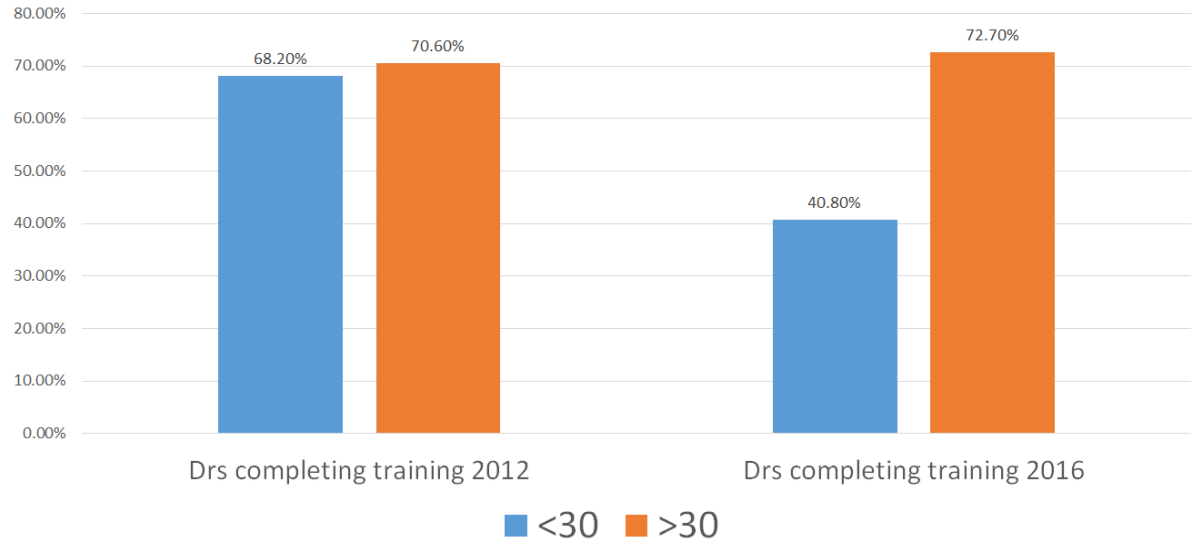
The GMC has noticed a difference in the pattern of behaviour of male and female doctors post-Foundation training with 29% female F2s taking a break compared with 31.3% males in 2012. In 2017, 51% of female F2s took a break compared to 56.3% of male F2s. The same difference between the genders is seen in NI doctors with both sexes having a higher frequency of taking a break post F2 in NI compared with overall UK figures (Figure 49).

Figure 49: Percentage of Male and Female doctors completing Foundation in NI who are not in training 1 year post-Foundation



There is also a difference in the behaviour of doctors with respect to age (Figure 50). Doctors who are over 30 are significantly more likely to progress to GP or specialty training directly from Foundation compared to those who are under 30.

Figure 50: Proportion of doctors starting in specialty training post- NI Foundation programme 2012-16 and the effect of Age

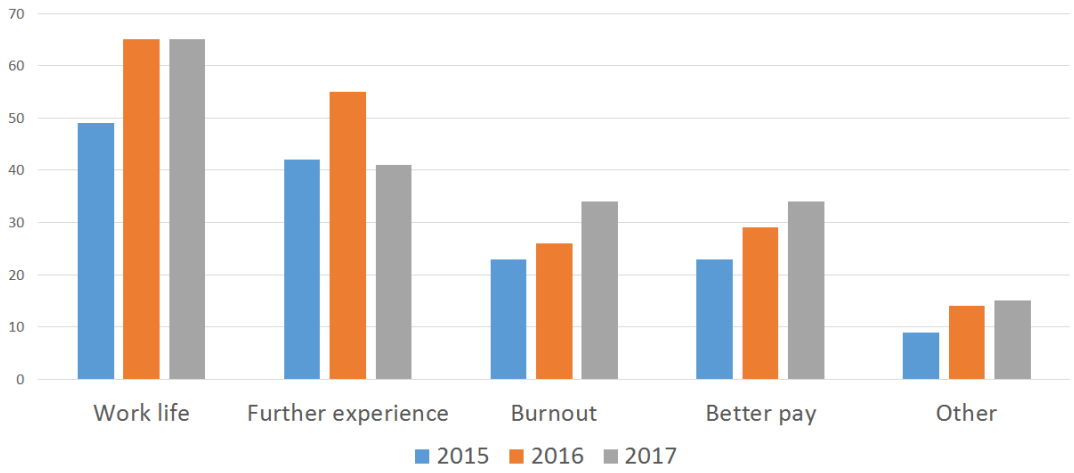


The GMC has looked at the transition from Foundation to Specialty training in a report in November 2017 (https://www.gmc-uk.org/Training_pathways_1___FINAL2.pdf_72695703.pdf). The reasons most frequently given by doctors for taking a break from training were:

- work/life balance (86% in 2017)
- to gain further experience before making a career decision (60%)
- feeling burnout after working in Foundation (51%)

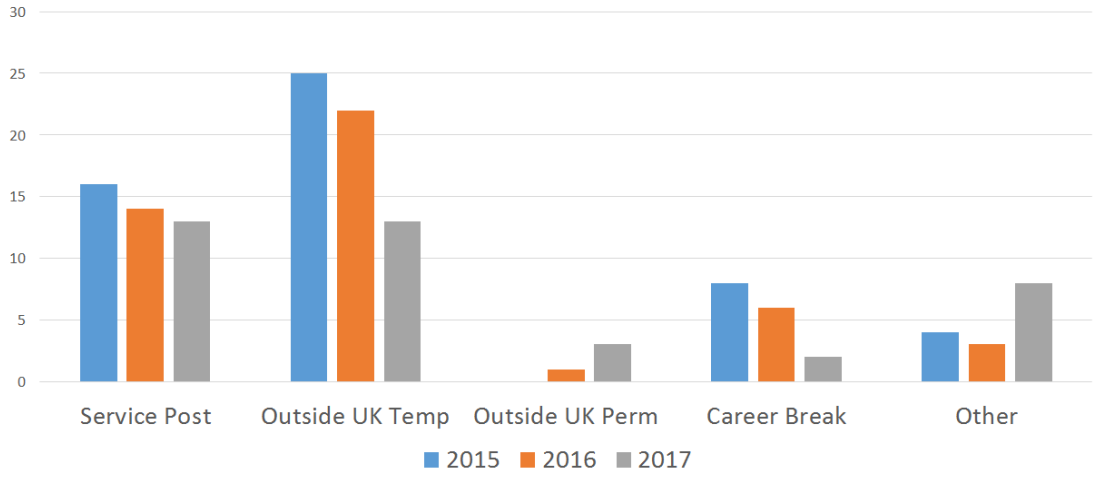
The specific responses for NI Foundation trainees are shown in Figure 51.

Figure 51: Reasons given by F2 trainees in NI for planning a break from training



Foundation trainees are asked for their intention post-Foundation by the GMC in the Annual National Trainee Survey. Figure 52 shows how the NI based trainees responded to this question.

Figure 52: Intentions of F2 trainees in NI as self-reported in the GMC National Trainee Surveys 2015-17

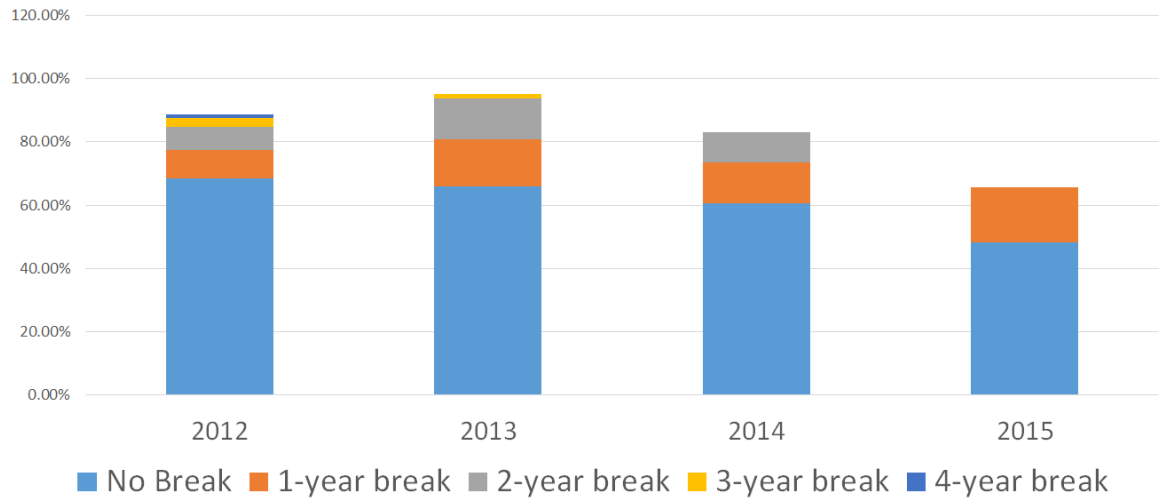


The British Medical Association (BMA) has indicated that doctors consider the end of F2 as a transition when many doctors choose to take a career break due to the need for more flexibility for caring or family responsibilities, a desire to undertake further study, a chance to travel and work abroad before committing to specialty training or the need for time out due to pressures of the service. The BMA reports that doctors desire a better work-life balance resulting in changing attitudes to established patterns of training and working, with more opting for portfolio careers including significant periods of locum work (BMA – The state of pre and post-graduate medical recruitment in England 2017).

The GMC has shown that across the UK, most doctors enter specialty or core training within 3 years of the end of F2. Between 87.8% and 89.7% of the doctors completing F2 in 2012, 2013 and 2014

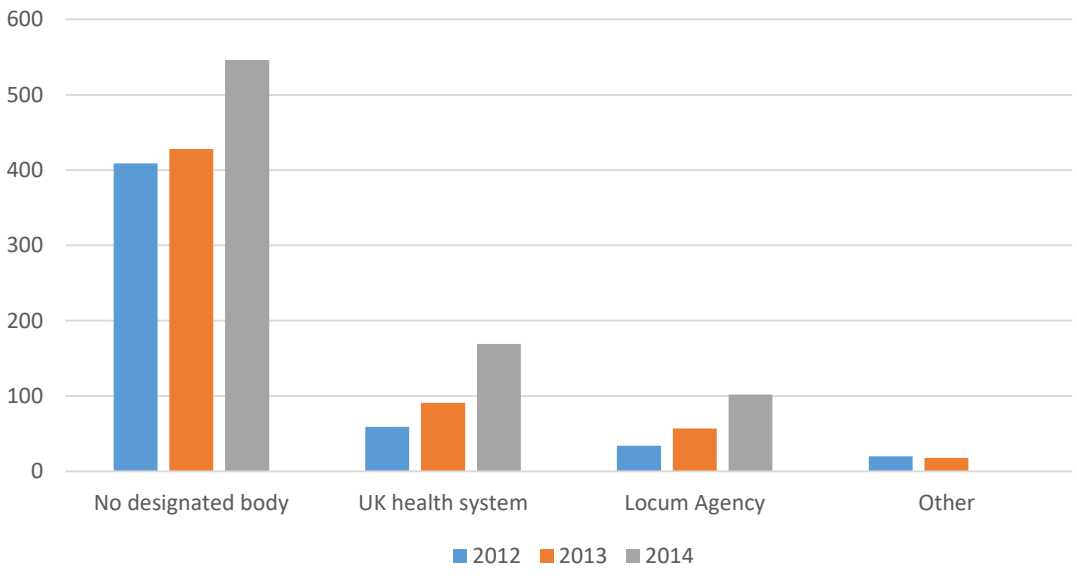
have entered the next stage of training within 3 years (GMC Training Pathways 2017). The number of doctors entering training within 3 years of completing the NI Foundation programme has dropped from 93.8% for those completing Foundation in 2013 to 79.3% for those completing Foundation in 2015 (Figure 53).

Figure 53: Proportion of doctors entering specialty training after NI Foundation training



The GMC has reported that 525 of the doctors who completed foundation training in 2012 in the UK have not returned to training by 2017 (Figure 54). Of these, 124 have retained their licence to practise, and so it is possible these doctors may yet take up training. The remaining 401 (5.4% of the 2012 cohort) are no longer on the medical register so it could be assumed that they are extremely unlikely to return to their medical careers in the UK. Some of these doctors will have come from outside the UK to undertake F2 medical training and will now have returned to their country of origin.

Figure 54: Location in 2017 of Doctors completing Foundation Programme in the UK in 2012, 2013 and 2014 and not returning to training



Post-Foundation, doctors may apply to enter training in any part of the UK.

The GMC has analysed this for the 2012 and 2016 cohorts of F2s. For NI, F2s who entered GP or Specialty training immediately post F2:

- 97% of the NI domiciles stayed in NI for specialty training in 2013 with 95% staying in NI for specialty training in 2017.
- 75% of non-NI domiciles stayed in NI for specialty training in 2013 and 81.3% stayed in NI for specialty training in 2017.

This difference in behaviour between doctors completing the NI Foundation programme with respect to domicile is shown in Figures 55 and 56.

Figure 55: Effect of Domicile (NI versus Non-NI Domicile) on where doctors, who complete Foundation Training in NI, undertake Specialty Training

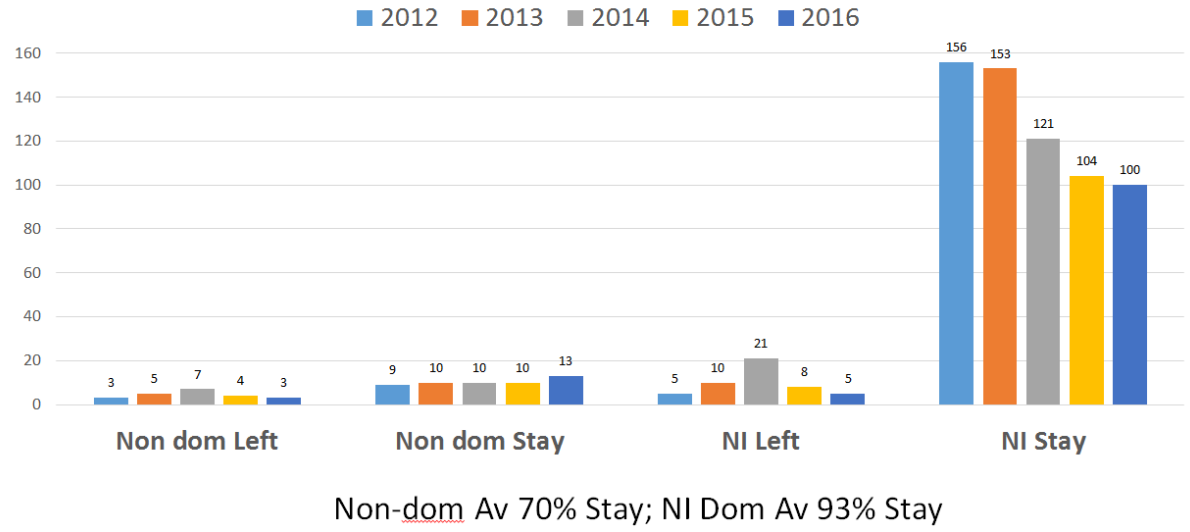
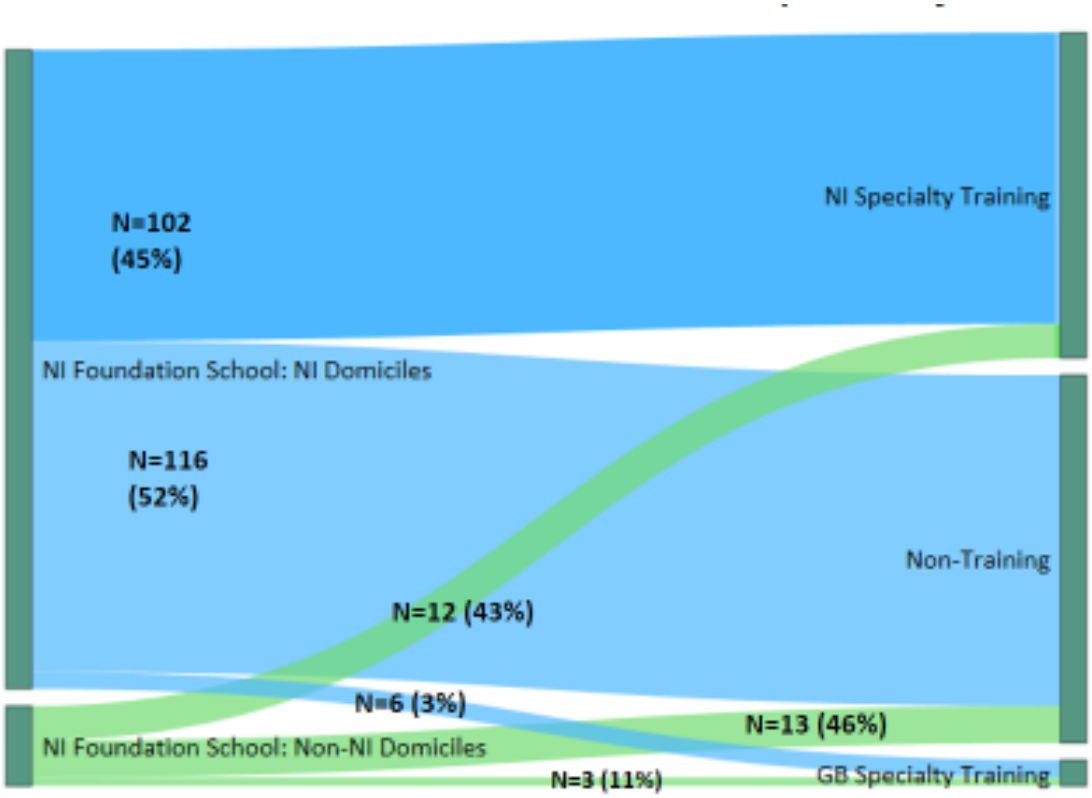


Figure 56: Flow of doctors post completion of NI Foundation Programme and effect of Domicile



The Sankey chart (Figure 56) shows that of the NI Domiciles who complete Foundation training in NI, on average 45% are entering GP or specialty training in NI, 3% are entering GP or specialty training in GB and 52% are not entering training immediately after completion of the Foundation programme in NI.

There is a very variable attrition rate between different post-Foundation training programmes in NI. The GP programme has the lowest attrition rate at 1.8%, with the highest attrition rate for a programme being 39% for core medicine. Core medicine is a programme trainees often will undertake to gain experience and to help them make up their mind about their career choice. Many of these trainees will leave this programme early to enter other training programmes. The attrition rate for selected NIMDTA programmes are shown in Table 25.

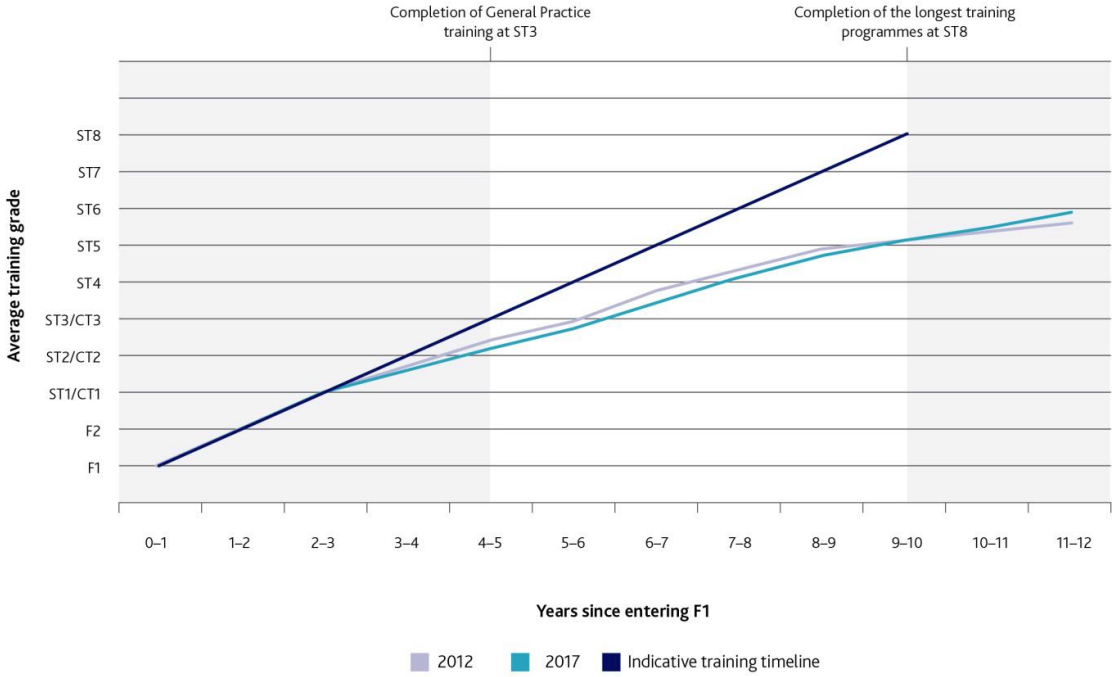
Table 25: Attrition Rates in Post-Foundation Programmes in NI

Programme	Attrition Rate
Acute Care Common Stem – Emergency Medicine	35%
Anaesthetics	29%
Clinical Radiology	7%
Core Medicine	39%
Core Surgery	35%
General Practice	1.8%
Obstetrics & Gynaecology	30%
Paediatrics	29%
Psychiatry	29%

GP and Specialty Training often take between one and four years longer than indicated in the curricula for the GP or specialty training programme (GMC Training Pathways)(Figure 57).

In this GMC figure, the dark blue line shows the average training grade against the number of years indicated in the curricula (for example completion of ST3 is indicated after five years of training including the foundation programme). The actual averages are shown by the grey line (average in 2012) and the light blue line (average in 2017). The averages includes all factors affecting progress including breaks, less than full-time training, time taken to achieve competencies and unsuccessful applications into chosen specialties.

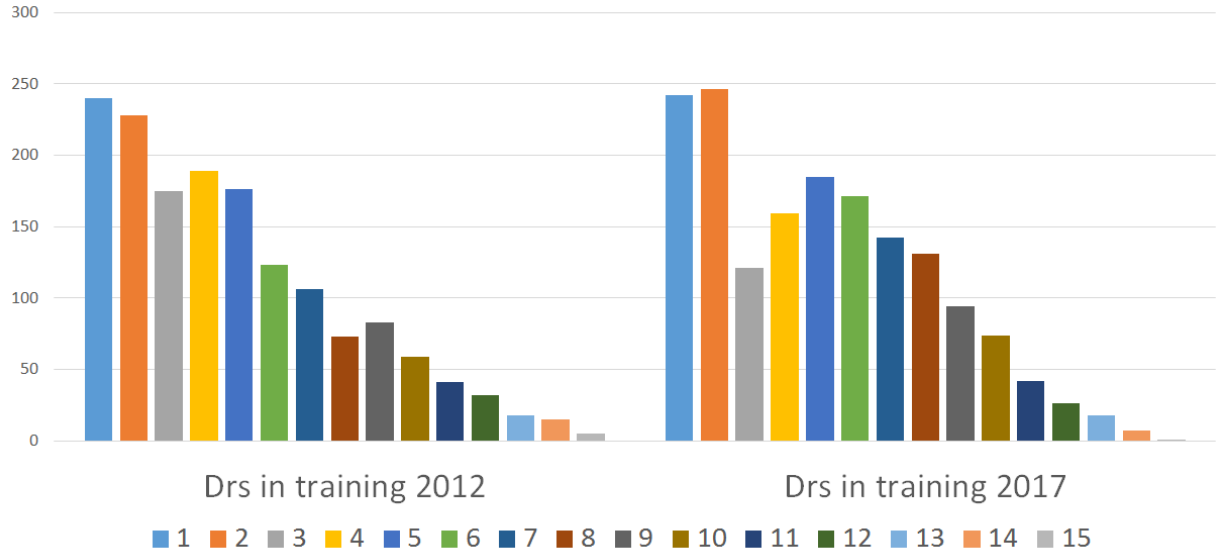
Figure 57: Duration of training on average for trainees in UK



The GMC data shows that it takes an average of 5½ years to complete the five years to the end of ST3, and 9 years to complete the seven years to the end of ST5. A doctor moving through training at the rate indicated in the curricula would expect to complete ST8 after 10 years, but in fact the average training grade after 10 years is just above ST5.

The duration that doctors have spent in training in NI is shown in Figure 58:

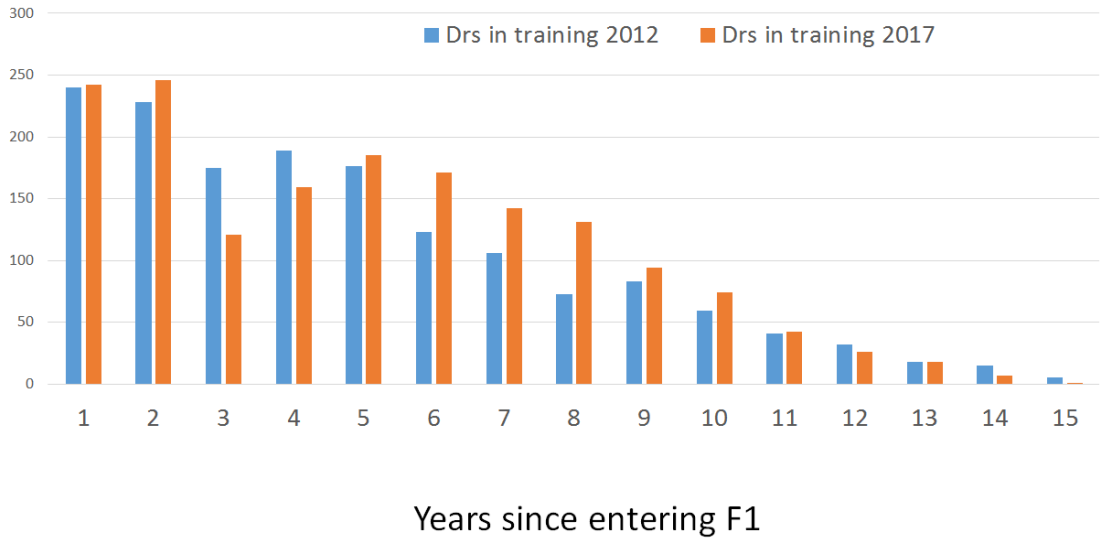
Figure 58: Duration in years that doctors training in NI have spent in training



The drop in the number of doctors who have been in training for between 3 and 4 years is thought to be due to doctors taking a break from training post-Foundation.

The GMC has also supplied information for Northern Ireland-based trainees on the number of years post-commencement of F1 that doctors have been in training (Figure 59).

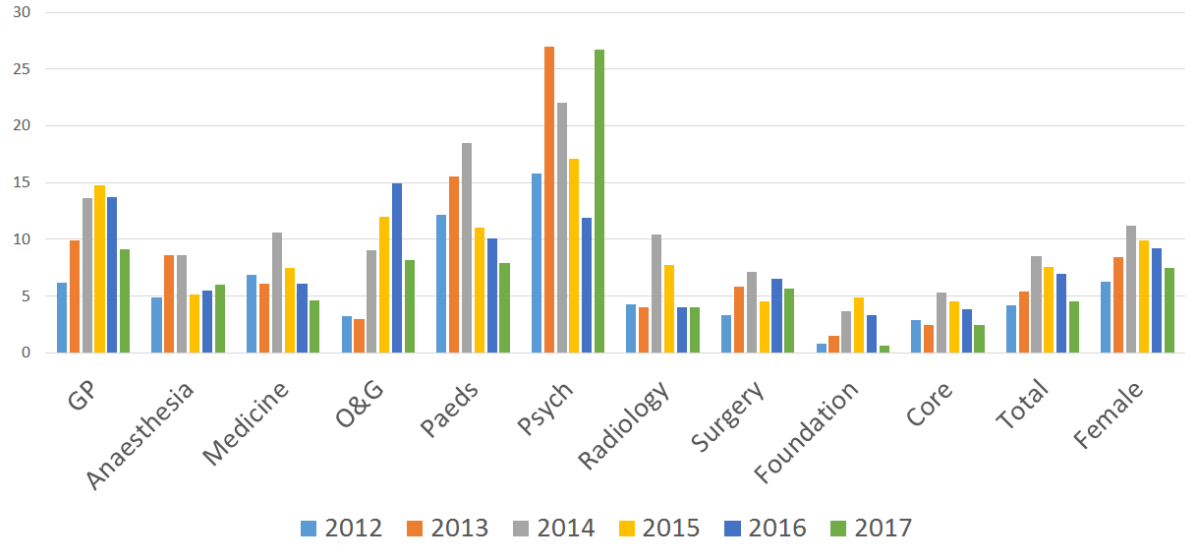
Figure 59: Number of years doctors in training who are UK PMQ holders have spent in training in NI since entering F1 – comparison of 2012 with 2017.



The number of year doctors spend in training depends on the length of the programme, any time taken out of training (research, experience, illness, maternity leave), any extensions to training that are necessary (eg difficulty in passing examinations; delays in obtaining competences) and whether the trainees are training full time or less than full time (LTFT). The GMC has supplied information on

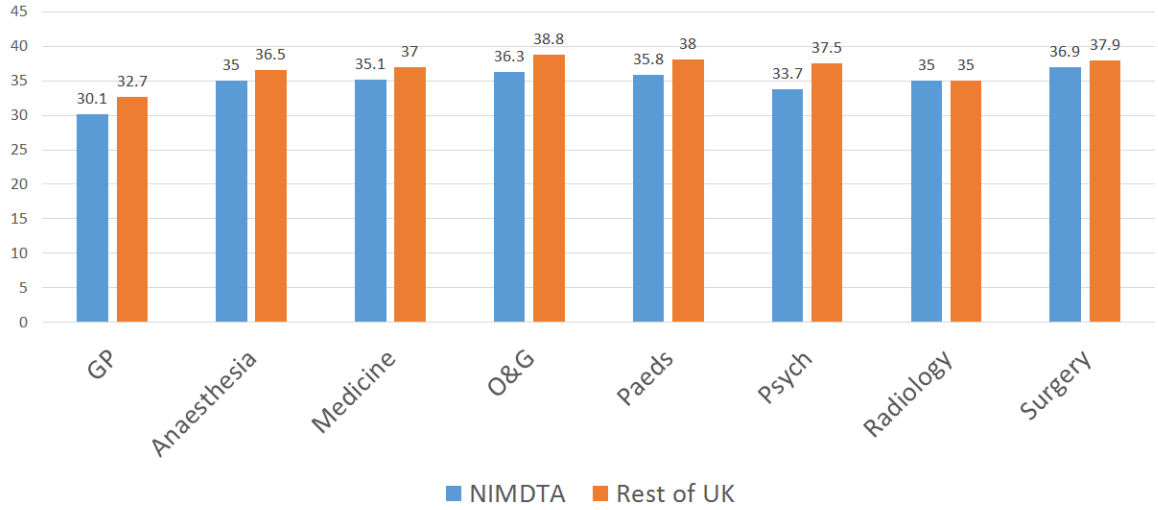
the number of trainees in NI who have self-reported through their responses to the Annual National Trainee Survey that they are training less than full time (Figure 60).

Figure 60: Self-reported Less than full time training on NI Training Programmes 2012-17 (%)



The GMC has supplied data on the average age at which doctors on NI training programmes acquire a Certificate of Completion of Training (CCT). This is shown in Figure 61. The GP training programme is 3 years in duration, the psychiatry programmes are 6 years in duration, whereas it takes at least 10 years post-provisional registration to complete surgical training programmes. The overall mean age at which a CCT is achieved for doctors on NI training programmes (excluding GP) is 35.4 years.

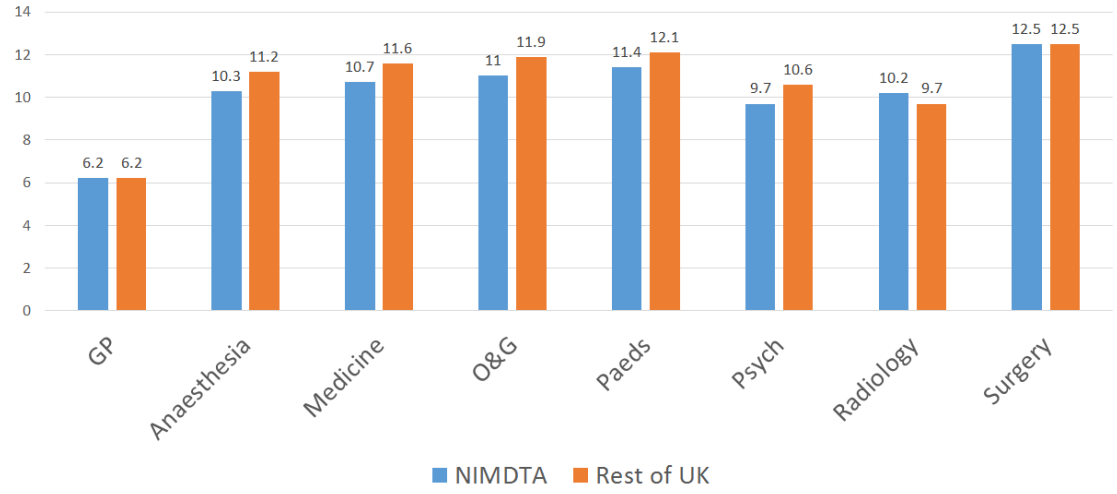
Figure 61: Mean Age to Achieve a Certificate of Completion of Training (CCT) – comparison between NI trainees and trainees in rest of UK



The mean number of years it takes trainees to achieve a CCT has also been supplied by the GMC and is shown in Figure 62 which compares NI trainees with those in the rest of the UK. As above, it takes a shorter time (as expected) to complete training in GP, radiology and psychiatry. Trainees in NI are

generally taking similar or fewer number of years to achieve CCT post-registration in comparison with trainees in the rest of the UK – with the exception of radiology.

Figure 62: Mean number of years for trainees to achieve CCT post registration – comparison of NI trainees with those from the rest of the UK



The average number of specialty trainees who achieve a Certificate of Completion of Training each year in NI in a specialty is 86 (Table 26) and in GP is 60.6 (Table 27).

Table 26: Number of trainees achieving CCT each year in NI in a Specialty

Year	Number of CCTs in Specialties
2013	78
2014	94
2015	76
2016	96
2017	62**

** Incomplete – as only until August 2017
Average 2013-2017 = 86/year

Table 27: Number of trainees achieving CCT each year in NI in General Practice

Year	Number gaining a CCT in GP
2011	66
2012	53
2013	68
2014	46
2015	62
2016	72
2017	57

Are there enough medical school places in NI?

As described above, a number of methods could be utilised to increase the medical input into the delivery of healthcare in NI by addressing:

- Inflow
- Outflow
- Mal-distribution
- Inefficiency

With regard to inflow, each of the potential sources of workforce could be considered (Table 28).

Table 28: Advantages and Disadvantages of approaches to Improving Inflow of Medical Workforce

	Disadvantages	**Advantages**
Increase medical student places in NI	1. Length of time to effect a change. Minimum 4-5 years at least for new F1s; further 5 years for GPs (average 6 years); a minimum of 6-10 for specialty training 2. Cost of student places, infrastructure and clinical academics	1. 68% of entrants to QUB are NI Domiciles 2. 86% of NI domiciles who graduate from QUB complete Foundation in NI 3. 95% of NI domiciles who complete Foundation in NI and enter specialty training do so in NI
Attract GB domicile QUB medical Students to stay in NI post-graduation	Uncertain success at retaining GB domicile graduates in NI. 58% GB domiciles currently return to GB post medical school. However 75-81% stayed in NI for specialty training when they had completed Foundation in NI	No extra placement, infrastructure and clinical academic costs
Attract NI domiciles to return to NI post medical school in GB	1. Limited return of NI domiciles post medical school in England – 75% stay; 25% return 2. Uncertain success at attracting NI domiciles to return post Foundation and post CCT	1. Avoids SUMDE* costs in NI 2. Earlier solution to workforce shortage as individuals have already completed medical school (at least)
Attract GB domiciles with medical degrees to work in NI	Uncertain success at attracting GB domiciles to train and remain in NI. Between 4 and 13 (mean 9/year) enter NI Foundation School each year out of 252 places – 3.5% fill rate. However 75-81% stayed in NI for specialty	1. Avoids SUMDE* costs in NI and student loans 2. Earlier solution to workforce shortage as individuals have already completed medical school (at least)

	training when they had completed Foundation in NI	
Attract Non-UK domiciles to stay in NI post-graduation from QUB medical school	Uncertain success at retaining Non-UK domicile QUB graduates in NI. 52% Non-UK domiciles currently move to GB post medical school with 33% remaining.	No extra placement, infrastructure and clinical academic costs
Attract non-UK domiciles with medical degrees to work in NI	1. Ethical issues regarding attracting international doctors from low resource economies 2. There is a small number of international domiciles undertaking Foundation training in NI – between 5 and 11 per year (mean 8/year) which represents 4% of Foundation doctors 3. In 2017 there were 542 EU doctors and 343 IMGs available to work in NI- respectively (8.9% and 5.6% of licensed doctors in NI). However, there is a falling cohort of EU and IMG doctors in NI indicating that this is currently not such an attractive option.	1. Avoids SUMDE* costs in NI and student loans 2. Earlier solution to workforce shortage as individuals have already completed medical school (at least)

(*SUMDE = Supplement for Undergraduate Medical and Dental Education)

At present, there are vacant medical posts at trainee, SAS, GP and specialist levels in healthcare services in NI. There are likely to be several possible reasons for this:

1. Increasing number of medical posts created at all levels due to growing service demand without any increase in the number of medical school places
2. Earlier retirements from GP and specialist positions due to work pressures, work/life balance issues and changes in pension arrangements
3. More less than full time training among trainees and more part-time working among permanent staff (SAS doctors, GPs and specialists) due to desire for better work/life balance and due to changes in gender balance in medical workforce in NI
4. Failure to complete training programmes
5. More doctors deciding to undertake locums rather than seek a permanent position due to desire to maximise earnings, have greater flexibility and better work-life balance
6. More doctors deciding to move to GB or overseas due to better pay, working conditions or opportunities.

Exploring the possibilities

(1) Increasing number of medical posts.

There have been significant increases in the number of medical posts for trainees, NCCGs, GPs and consultants in NI over the last 10 years as shown by HSC and NIMDTA data. There has been no increase in the number of medical school places in NI since 2005 with, in fact, a small reduction in the number of places for students from 'Home and EU' in 2011 (from 250 to 236).

(2) Retirements

HSC data has shown that the age at consultant retirement has stayed very steady over a 10-year period with a mean age of 59.8 years (Table 29).

Table 29: Mean Age of Retirement of Consultants in the HSC

Period Covered	Number of retirees	Average age of retirees
1.05.08- 30.04.09	44	59.55
1.05.09- 30.04.10	41	59.17
1.05.10- 30.04.11	41	59.88
1.05.11- 30.04.12	50	59.78
1.05.12- 30.04.13	32	60.03
1.05.13- 30.04.14	45	59.91
1.05.14- 30.04.15	33	59.61
1.05.15- 30.04.16	53	59.66
1.05.16- 30.04.17	36	60.00
1.05.17- 30.04.18	40	60.33

There is a small difference between retirement ages of male and female based on a smaller sample of consultants for the years 2014-15 until 2017-18, with the mean age at retirement for females being 60.3 and for males 61.1 years. For the purposes of this review, this difference was not considered significant.

HSC data shows that the average age at appointment as a specialist in 1995-96 was 37; the average age of appointment as a consultant in 2003-04 was 35.6; and the average age at acquiring a CCT in NI in 2017 was 35.5.

The median number of years during which consultants work in the HSC is 23.3 (Table 30). The mean number of consultants leaving the HSC between 2013 and 2017 each year was 66 (range 62 -71). The mean number of consultants relinquishing their licence to practise in NI between 2014 and 2016 was 63 (range 60-65).

Table 30: Median Years of Service as a Consultant in the HSC

Year of retirement	Median (male + female)
14.15	22.2 years
15.16	23.3 years
16.17	24.3 years
17.18	23.3 years

The mean age of a doctor becoming a NCCG in the HSC is 33.5 years and the median duration of working as a NCCG in the HSC is 19 years. The mean number of NCCGs leaving the HSC each year between 2013 and 2017 was 52.7 (range 42-78). The mean number of NCCGs relinquishing their licence to practise each year between 2014 and 2016 was 74 (range 63-80).

For GPs, the mean age at retirement is 59.0 and this has also been reasonably steady over a 10-year period (Table 31). The mean number of GPs relinquishing their licence to practise each year between 2014 and 2016 was 74 (range 62-86).

Table 31: Mean Age of Retirement of GPs in NI

Period Covered	Number of retirees	Average age of retirees
1.05.08- 30.04.09	55	60.45
1.05.09- 30.04.10	44	59.07
1.05.10- 30.04.11	42	58.90
1.05.11- 30.04.12	45	59.18
1.05.12- 30.04.13	53	58.79
1.05.13- 30.04.14	59	59.71
1.05.14- 30.04.15	40	58.88
1.05.15- 30.04.16	45	58.38
1.05.16- 30.04.17	78	58.51
1.05.17- 30.04.18	39	58.38

(3) Less than Full Time Training and Part-time working

There has been an 38% increase in the number of trainees who are training less than full time over the last 5 years in the UK (GMC SOMEP 2017) though this is less obvious for the NI cohort (Figure 63).

There is some evidence that there is also more less than full time working at a specialist level. The Royal College of Physicians (RCP) carries out an annual census. The RCP report published in June 2018 shows a continuing upward trend in the reporting of less than full time training among higher specialist trainees and less than full time working among consultant physicians in the UK (Figure 63). There is a marked difference in take up of less than full time training among the higher medical

trainees (female 25%; male 3%) and this marked difference is also seen at consultant level (female 45%; male 10%)(Figure 64).

Figure 63: Trend in Percentages of Less than Full Time Training and Working (RCP)

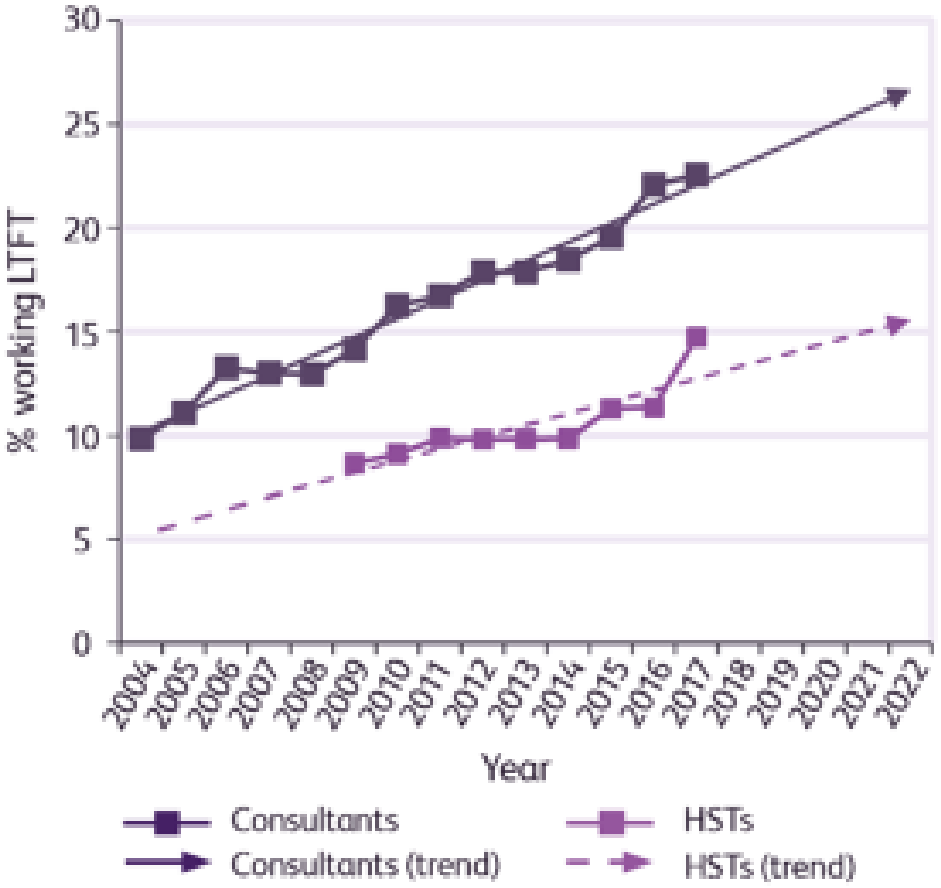


Figure 64: Percentage of Less than Full Time Working for Consultants – with respect to age and gender (RCP)

(4) Failure to complete training programmes

Not all doctors who enter a training programme will continue that training programme until completion. Doctors may leave a programme due to a decision to change to a different training programme, for family or personal reasons, due to failure to progress in training including examination difficulties, a desire to travel or work overseas or as a result of disillusionment with medicine as a career. Attrition rates for the Foundation, GP and selected training programmes in NI have been described (Table 23; Table 25).

(5) Locum work

There has been an increase over the last 5 years in the number of doctors living in NI at both non-consultant and at specialist levels whose designated body is a locum agency (Table 4).

(6) Moving to GB or overseas

Of those NI domiciles who graduate from QUB Medical School, 14% leave NI to undertake Foundation training in the rest of the UK. Of those who complete the Foundation programme in NI, between 16-25/year (out of cohort of 252) report that they intend to work outside the UK (Figure 52). Of those who enter specialty training post-Foundation training in NI, 3% undertake this training in GB (Figure 56).

What are the cost and capacity issues?

If a decision is made to increase the number of funded medical student places in NI, then there will need to be a consideration of:

- Size of pool of potential applicants
- Cost and value for money for different options (models of delivery, cost of placements, infrastructure, student loans)
- Capacity within the healthcare services in NI to teach more medical students in the context of the requirements to teach healthcare students from different professions and train post-registration healthcare professionals.
- Institutional location of new medical student placements
- Implications for appointment of new Clinical Academic Staff and availability of that resource
- Need for expansion in Foundation Programme places and associated costs (salary and training costs)
- Need for expansion in Specialty and GP training places and associated costs (salary and training costs)
- Need for expansion in the number of postgraduate programme leaders and education management staff
- Capacity of HSC to provide training opportunities for an increased number of Foundation, GP and specialty trainees.
- Options for a 'Return of Service' bursary to encourage medical students to commit to working in the HSC after they graduate from medical school.

With regard to the size of the pool of potential applicants, data is available from UCAS (Table 14 and Table 15). Table 15 shows that there have been between 490 and 660 applicants from NI Domiciles to study medicine between 2012 and 2018. One worrying factor is a drop in both the number of applications and applicants from NI Domiciles to study medicine in the UK (Table 32; Table 33). The number of applicants in 2018 was 76.6% of the 2012 level.

Table 32: Applications for UK Medicine Courses by Domicile Group

Subject group (JACS3)	2013	2014	2015	2016	2017
Group A Medicine & Dentistry	3,020	2,770	2,600	2,640	2,460
Group B Subjects allied to Medicine	16,620	15,570	15,520	16,490	15,000
Group C Biological Sciences	6,440	6,570	6,930	6,960	6,600
Group D Vet Sci,Ag & related	1,400	1,390	1,370	1,480	1,220
Group F Physical Sciences	2,870	2,730	2,910	2,710	2,580
Group G Mathematical Sciences	970	1,010	1,270	1,110	1,030
Group H Engineering	4,820	4,690	4,760	4,780	4,690
Group I Computer Sciences	6,570	7,180	7,370	7,640	6,580
Group J Technologies	370	350	310	190	120
Group K Architecture,Build & Plan	1,700	1,600	1,880	2,130	2,400
Group L Social Studies	7,210	7,110	7,380	7,330	7,060
Group M Law	3,320	3,330	3,600	3,570	3,550
Group N Business & Admin studies	9,870	10,510	10,630	11,680	11,070
Group P Mass Comms and Documentation	2,240	2,320	1,780	1,970	2,200
Group Q Linguistics, Classics & related	1,530	1,730	1,640	1,450	1,480
Group R European Langs, Lit & related	720	640	790	550	550

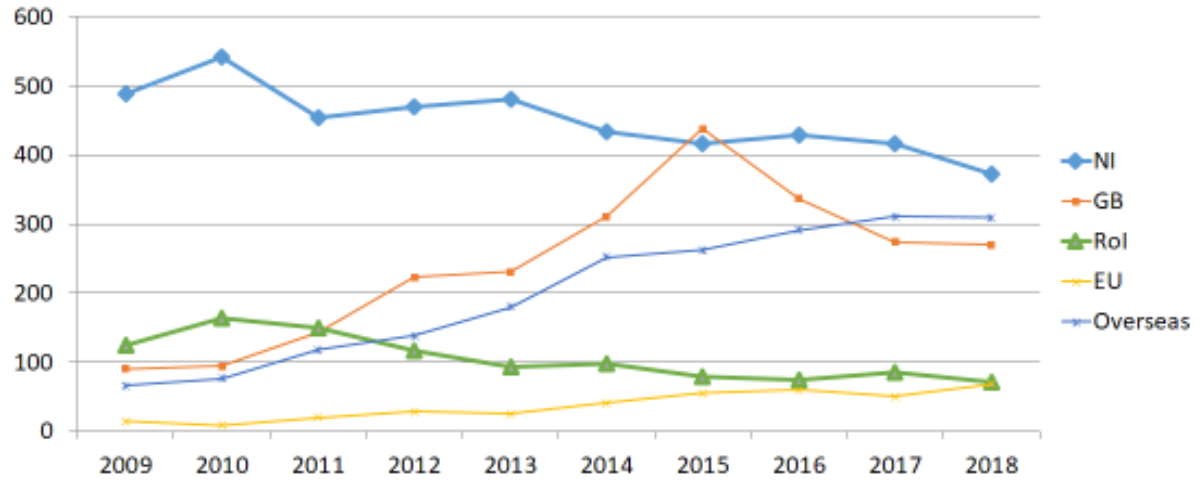
Table 33: Applicants for UK Medicine Courses by Domicile Group

Domicile of applicant	2012	2013	2014	2015	2016	2017	2018
England	14,240	14,520	14,670	12,930	12,620	12,320	13,480
Northern Ireland	640	660	590	570	580	540	490
Scotland	1,180	1,160	1,170	1,060	1,050	1,030	1,070
Wales	670	670	710	660	570	570	580
--UK	16,730	17,000	17,140	15,220	14,820	14,450	15,620
EU (excluding UK)	1,960	1,990	2,110	1,940	2,050	1,720	1,800
Not EU	2,950	3,130	3,490	3,230	3,240	3,040	3,310
--All	21,650	22,130	22,740	20,390	20,100	19,210	20,730

UK 2018 level – 94.6% of 2012 level
NI 2018 level – 76.6% of 2012 level

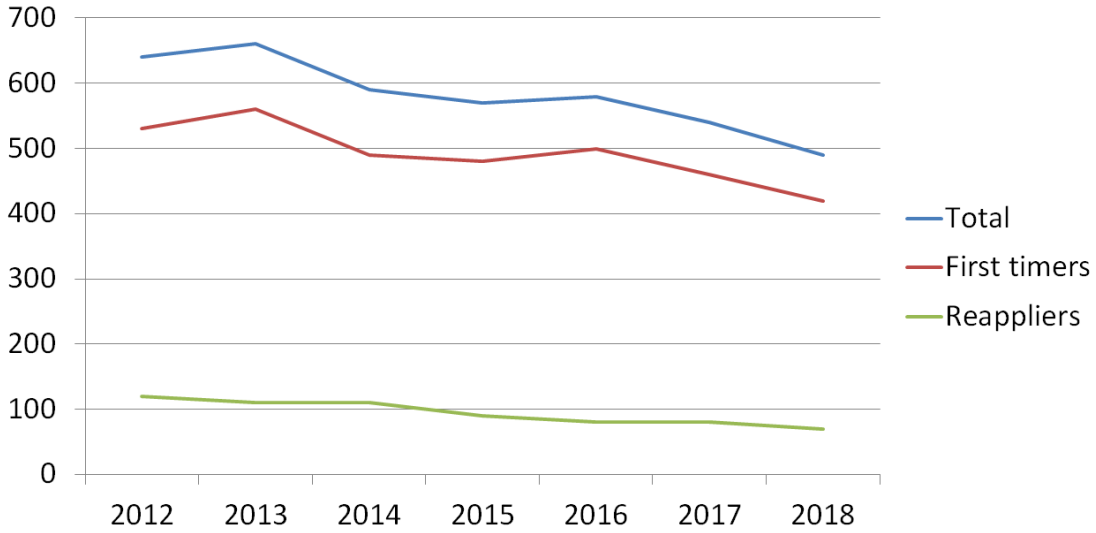
During the same time period, there has been a reduction in the number of applicants to QUB Medical School from Ireland as well, but an increase in applications to QUB from GB, EEA and internationally (Figure 65).

Figure 65: Domicile of Applicants to QUB Medical School 2009-2018



The reduction is seen to affect both the first time applicants and the re-appliers (Figure 66). The BMA has suggested that rising tuition fees, higher student debt and negative experiences of existing students and doctors could all be factors impacting negatively on the attractiveness of medical school application for school leavers (BMA – The state of pre and post-graduate medical recruitment in England 2017). There has been an increase in NI domiciles applying for undergraduate programmes in education, architecture, science and business studies. This suggests that medicine is no longer as preferred a career choice as it has previously been among NI school students.

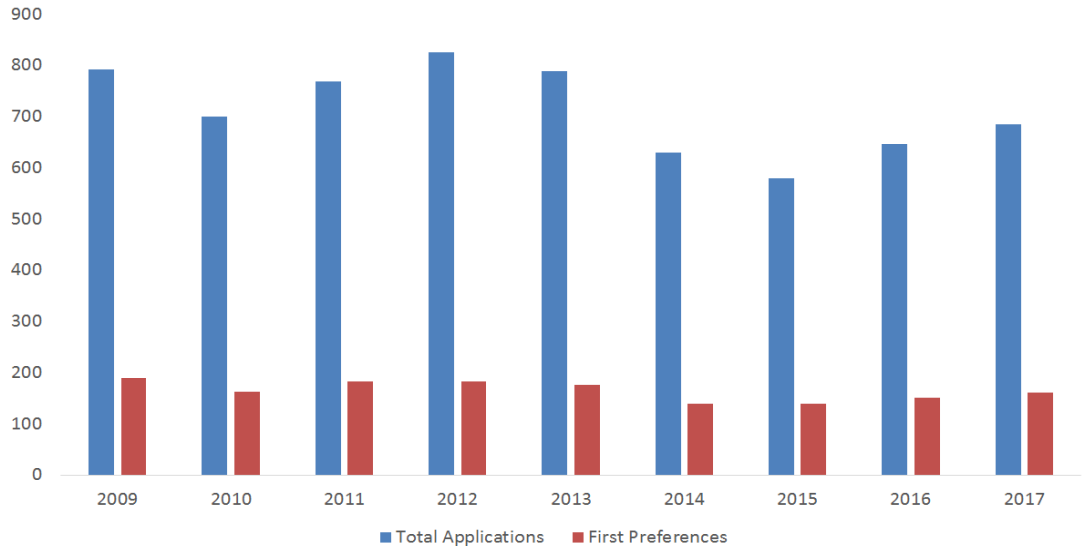
Figure 66: NI Domicile Applicants for Medicine in the UK 2012–18 – First time and Re-appliers



There are also NI domiciles who apply to Irish medical schools each year (Figure 67). Over a nine- year period there are a median of 701 applications from 164 applicants, with 39 offers being made of which 19 are accepted (Figure 68). It is not known how many NI Domiciles study medicine in a European country other than Ireland.

However, as shown in Figures 41 and 42 and in Table 21, there are in the region of 360- 400 NI domiciles studying medicine or being a F1 or F2 doctor at any time in the UK - confirming interest among the NI population in studying medicine. On average, over the last 5 years (2014-18), there were 413.6 applicants from NI to study medicine at QUB (range 373-434).

Figure 67: NI Domicile Applications and Applicants to study Medicine in Ireland 2009-2017



Median: Applications 701; Applicants 164

Figure 68: NI Domicile Offer and Acceptance to Study Medicine in Ireland 2009-17

Median: Offers 39; Acceptances 19

What are the plans of other UK countries for the number of medical school places?

England currently has 6000 funded medical school places/year. An additional 500 places/year are being funded from September 2018 and a further 1000/year are being funded to start in September 2019. This is an increase of 25%, staged over 2 years.

Scotland currently has 800 funded medical school places/year. The Scottish Government has decided to increase the number of medical school places by 200/year – an increase of 25% over 3 years.

The Welsh Government is currently considering a proposal to increase the number of funded medical school places in Wales.

The Royal College of Physicians in a briefing paper in June 2018 (Double or quits), based on its knowledge of consultant vacancies, attrition rates at medical school and in postgraduate training programmes and its estimations of a 47% increase in demand by 2030 has calculated that the increase in medical student places in England to 7500/year is much too small. They have recommended that the number should be increased now to 15,000/year to meet the demand in 2030 (https://www.rcplondon.ac.uk/news/double-or-quits-calculating-how-many-more-medical-students-we-need) .

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Transforming Your Care http://www.transformingyourcare.hscni.net/

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Terms of Reference

Review of Annual Number of Medical School places needed in Northern Ireland

Background

The Department of Health commissions the number of places for medical students in Northern Ireland. This review is being undertaken to determine the optimum number of medical student places that NI requires per year to meet the medical component of healthcare in NI.

It has been included as an early action in the Department's workforce strategy, which was commissioned prior to finalising the workforce strategy.

Definitions

Role of the doctor

Doctors are clinical scientists who apply the principles and procedures of medicine to prevent, diagnose, care for and treat patients with illness, disease and injury and to maintain physical and mental health. They supervise the implementation of care and treatment plans by others in the health team and conduct medical education and research (The role of the doctor consensus statement http://www.nhsemployers.org/~/media/Employers/Documents/Plan/consensus_statment_medical_workforce.pdf).

Medical workforce

The medical workforce in the UK is made up of GPs, Medical consultants, Clinical Academics, medical leaders licensed to practice, SAS doctors (staff grade, associate specialist and specialty), doctors employed under local conditions (LED - Locally Employed Doctors), locums and doctors in training.

Doctors in training

Doctors in training are doctors who are enrolled on Foundation, GP and Specialty training programmes in the UK which have been approved by the General Medical Council.

Optimum number

This is the number of Medical School places that DoH needs to fund to ensure that there is a sufficient supply of doctors progressing to become GPs, SAS doctors and consultants who choose to remain in NI to contribute to the delivery of healthcare for the population of NI.

Foundation Programme

Medical graduates need to satisfactorily complete year 1 of the 2 year Foundation programme in order to be granted full registration by the General Medical Council. Therefore the number of Foundation Programme places available in NI should approximate the number of successful medical graduates in NI.

Assumptions

For the purpose of this review, it is assumed that

- the existing medical contribution to healthcare delivery will remain the same (notwithstanding the potential for development /enhancement of new roles and skills in the future); and
- the number of new GP trainees needed in NI is currently 111 trainees/year as stated in the GP Medical Workforce Plan (notwithstanding the potential for enhanced services to be provided in primary care).

The review should also take account of:

- projected NI population trends, and associated health and social care implications;
- attrition rate trends in respect of entry to and progression through foundation and post-foundation programmes;
- reasons why people are not working or not working full time, including maternity leave, paternity leave and sick leave; trends in part time working and career breaks; and
- retirement and early retirement trends; and
- Brexit.

Scenarios

The review will be carried out in two phases.

Phase one will scope the optimum number of Medical School places that DoH would need to fund in order:

(1) that 111 doctors will enter the NI GP training programme each year[1]; and

(2) to sustain the medical workforce in secondary care-based medical specialties for the following three scenarios:

(i) the current HSC configuration (as at 1 July 2017);

(ii) a reconfigured HSC with seven acute hospitals;

(iii) a reconfigured HSC with five acute hospitals.

[1] The review's focus should primarily be on assuming that 111 doctors need to enter the NI GP training programme each year. If possible, some outline modelling for 130 and 150 NI GP training places should be included in the review.

Phase one will also consider the following:

(i) Delay and attrition during undergraduate study (additional years necessary or not completing course to graduation)
(ii) Delay and attrition after graduation (gap after graduation or never actually practising medicine)
(iii) Delay and attrition during Foundation Programme (additional years necessary or never completing Foundation training)
(iv) Delay and attrition after Foundation Programme (gap after completion of Foundation Programme or never practising medicine again in NI)
(v) Delay and attrition during GP Specialty Training (additional years necessary or not completing GP training)
(vi) Delay and attrition during Hospital Specialty Training (additional years necessary or not completing Hospital Specialty training)
(vii) Delay and attrition after GP Specialty Training (never practising medicine again in NI)
(viii) Delay and attrition after completing Hospital Specialty Training (never practising medicine again in NI)
(ix) Number of GPs, Specialty doctors and Hospital Consultants coming to work in NI having trained elsewhere.
(x) Average age of relevant staff at retirement

Phase two will seek to further refine the phase one scenarios, by considering the following:

- Demographic changes (increasing number of patients with multiple illnesses (multiple co-morbidities) associated with the aging population; new diagnostic tests; increasing use of existing diagnostic tests (changing thresholds for test; screening))
- New treatments (increasing use of existing treatment options (new indications; changing thresholds))
- New technology
- New roles
- Move to 7-day services, and increased evening access
- Differences in deprivation between areas
- Medical Migration
- Changes in Professional Standards
- Implications of Public Inquiries

Scope

This review will consider

- The numbers of doctors who directly enter General Practice or directly enter specialty training after completing the foundation programme, in the past five years, how those numbers fluctuate, and the current position.
- The numbers of doctors who enter General Practice or specialty training after working as locums, in the past five years, how those numbers fluctuate, and the current position.
- How many consultant, non-consultant career grade doctor and doctor in training WTE posts, and GP equivalents, are currently funded in secondary care in NI.

- How many whole time equivalent GPs (principals, salaried and locum) and whole time equivalent doctors in training are currently working in primary care in NI.
- How many consultants, non-consultant career grade doctors and doctors in training, and GPs, are working part-time/training less than full time, and how work-life balance is managed.
- How many consultants and non- consultant career grade doctors, and GPs, join the HSC each year for the first time[2].
- How many consultants and non- consultant career grade doctors, and GPs, leave the HSC completely each year (dismissed, resign, retire, die in post).
- How many consultants etc who are off on prolonged illness or are on maternity or paternity leave, or career breaks, at any time.
- How many consultants, non-consultant career grade doctors and doctors in training, and GP equivalents, working in NI studied medicine in NI.
- How many doctors in training complete a run-through or higher specialty training programme each year in NI.
- How many NI domiciled medical graduates choose to train and remain in NI.
- How many NI medical school entrants are NI domiciles.
- How many NI domiciles who graduated from GB medical schools choose to train and remain in NI
- Outline options to address the long-term HSC capacity gap across secondary care specialties.
- Outline a list of options for securing tenure of contract within the HSC for a reasonable period following training.
- Any potential implications, arising from these review findings, for the medical education curriculum.

Delivering Together
The review should be congruent with the principles outlined in Delivering Together 2026.

Existing Workforce Plans
The Department will supply the review team with a list of existing workforce plans, to assist the team with background work and avoid unnecessary duplication of effort.

Review Team
- Chair: Professor Keith Gardiner, NIMDTA
- Nominees from DoH, HSCB, PHA, Trust Medical and HR Directors, QUB and UU.

[2] The issue of recognition of the role of non-consultant career grade doctors needs to be recognised in the numbers of doctors needed. Currently there are many service gaps in this grade across specialties in secondary care. Some Deaneries in the UK are now increasing the numbers in training to provide for consultants AND NCCG doctors.

- Reporting to : DoH Top Management Group

Administration and research support

- To be provided by Workforce Policy Directorate, DoH.

Timescale

Review to start Autumn 2017.

Phase one timetable

Brief progress update to be delivered to the Department by 31 December 2017.
Preliminary report to be delivered by 31 March 2018.

Phase two timetable

Supplementary report to be delivered by 30 June 2018.

Appendix 2 – Membership of the Medical School Places Review Group

Core Group

Professor Keith Gardiner	Chief Executive/Postgraduate Medical Dean NIMDTA (Chair)
Ms Denise Hughes	Education Manager, NIMDTA
Dr Gillian Rankin	Expert Adviser to the Group
Mr Peter Barbour	Assistant Director, Workforce Policy – DoH
Ms Alison Dunwoody	DP Statistician, Information & Analysis – DoH

Steering Group

DoH Primary Care	Mr Mark Lee Ms Patricia Quinn-Duffy (Dep)	Director, Primary Care- DoH
DoH Workforce Policy	Mr Andrew Dawson	Director, Workforce Policy – DoH
DoH Professional Lead	Dr Paddy Woods	DCMO - DoH
HSC Medical Director	Dr Richard Wright Mr Simon Gibson (Dep) Dr Seamus O'Reilly	Southern HSC Trust Southern HSC Trust Northern HSC Trust
HSC HR Director	Mr Damian McAllister Ms Ann McConnell Ms Pamela Crozier (Dep)	Belfast HSC Trust Western HSC Trust Western HSC Trust
PHA	Dr Adrian Mairs Dr Stephen Bergin	Public Health Agency Public Health Agency
QUB	Professor Pascal McKeown	School of Medicine, Dentistry and Biomedical Science
UU	Professor Hugh McKenna Mr Richard Johnston (Dep)	Medical School Development Economic Policy Centre
DoH Secretariat	Mr Robert Cranston	

Dates of Meetings of Reference Group

Thursday 14 December 2017
Friday 26 January 2018
Friday 23 February 2018
Thursday 29 March 2018
Thursday 19 April 2018
Thursday 31 May 2018
Friday 29 June 2018

Appendix 3 - Engagement with Stakeholders

General Medical Council	Thursday 1 March 2018
Queen's University Belfast	Thursday 29 March 2018
HSC Human Resource Directors' Forum	Friday 13 April 2018
Public Health Agency	Monday 16 April 2018
DoH Medical Leaders' Forum	Monday 23 April 2018
NI Population Health Needs Assessment	Tuesday 24 April 2018
Postgraduate Medical Education Forum	Wednesday 2 May 2018
GP Representatives	Thursday 3 May 2018
Trust Chief Executives' Forum	Monday 14 May 2018
DoH Medical Education Policy Group	Wednesday 16 May 2018
NIMDTA Trainee Forum	Wednesday 16 May 2018
South Eastern HSC Trust written submission	Friday 18 May 2018
BMA Junior Doctors' Committee	Friday 18 May 2018
Northern HSC Trust	Wednesday 16 June 2018
Health and Social Care Board	Monday 18 June 2018
Belfast HSC Trust	Tuesday 19 June 2018

Appendix 4 - Abbreviations

A level	Advanced level (General Certificate of Education)
BHSCT	Belfast Health and Social Care Trust
BMA	British Medical Association
BSc	Bachelor of Science
CCT	Certificate of Completion of Training
CEGPR	Certificate of Eligibility for GP Registration
CESR	Certificate of Eligibility for Specialist Registration
CMT	Core Medical Training
DoH	Department of Health
Dom	Domicile
EEA	European Economic Area
EM	Emergency Medicine
EU	European Union
F1	Foundation year 1
F2	Foundation year 2
GB	Great Britain
GEM	Graduate Entry Medicine
GMC	General Medical Council
GP	General Practitioner
HEI	Higher Education Institution
HR	Human Resources
HSC	Health and Social Care
IMG	International Medical Graduates
IMU	International Medical University, Malaysia
LAT	Locum Appointment for Training
MSc	Master of Science
MSPR	Medical School Places Review

NCCG	Non-consultant career grade doctors
NHS	National Health Service
NIMDTA	NI Medical and Dental Training Agency
NISRA	NI Statistics and Research Agency
O&G	Obstetrics and Gynaecology
ONS	Office for National Statistics
OOH	Out-of-hours
Paeds	Paediatrics
PMQ	Primary Medical Qualification
QUB	Queen's University Belfast
RCP	Royal College of Physicians
ScotGEM	Scottish Graduate Entry Medicine
SAS	Staff Grades, Specialty doctors and Associate Specialists
SOMEP	State of Medical Education and Practice in the UK (GMC)
SUMDE	Supplement for Undergraduate Medical and Dental Education
UCAS	Universities and Colleges Admissions Service
UKFPO	UK Foundation Programme Office
UKMED	UK Medical Education Database
WHO	World Health Organisation
WTE	Whole time equivalent