

Document Title: Scotland's Future Laboratory Workforce



Scotland's Future Laboratory Workforce

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1. Executive Summary

The pressures on staffing resource within NHS Scotland are well understood, with increasing clinical demand and patient expectation outstripping workforce capability, increasing waiting times and imposing ever increasing financial demand. Laboratory medicine is affected in the same way as every other service, but is beginning to design creative solutions to address the problem. This report describes the current workforce challenges, and makes recommendations on how we might reshape our workforce to meet the ever increasing demand. It is imperative that we are successful in this; Laboratory medicine is a set of key infrastructure specialties on which many others and their patients depend. It sets the patient on a treatment pathway, enables appropriate and specific remedy and monitors progress. Laboratory medicine unlocks the value of modern molecular science to allow personalised care. Limiting laboratory capability limits benefit to patients.

Laboratory medicine is a unique partnership between medical staff, healthcare scientists and support staff. This partnership highlights some of the challenges, but also points to some potential solutions. More than a quarter of our laboratory medical staff are likely to retire in the next 7 years; 10% in the next 2-3 years. This is in the context of a vacancy rate of nearly 12%. Current specialty training numbers are insufficient to fill existing and near future vacancies, and there is no pool of trained staff internationally from which we can recruit. Even if we were to increase training numbers immediately, the training takes a minimum of 5 years, so while more medical staff is a key requirement, it cannot be the only solution. We need to be able to better support this portion of the workforce to focus on those roles which require their clinical licence and expertise.

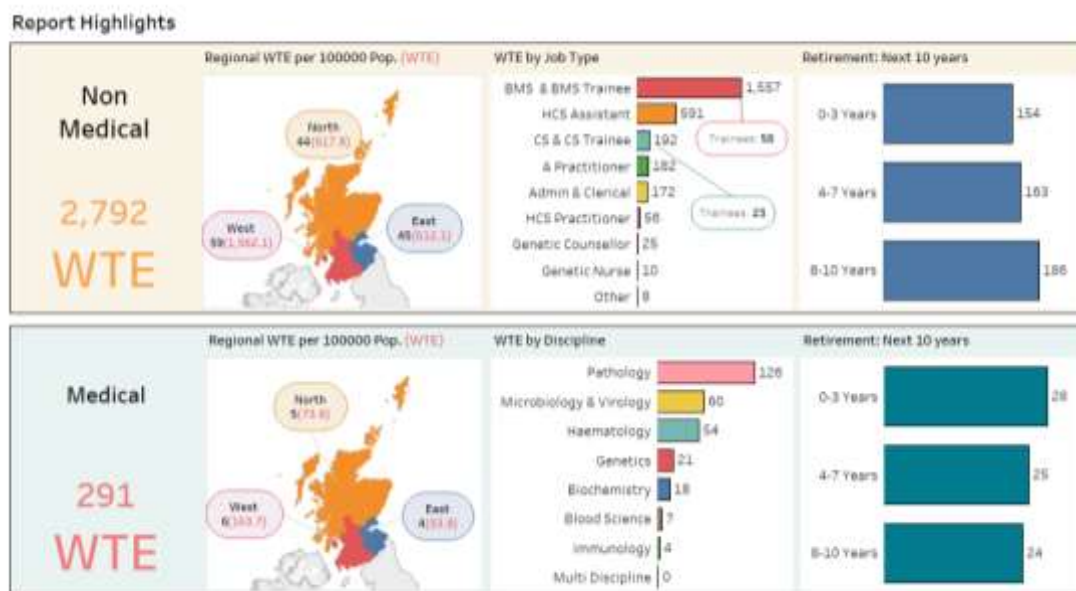


Figure 1: Workforce Overview

Many of our laboratory disciplines (Biochemistry, Haematology, Genetics, Microbiology and Virology) have recognised the need for Clinical Scientists working at Fellowship of the Royal College of Pathologists (FRCPath) level, the recognised standard of training for Consultant

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staff in Laboratory medicine, and many departments are using these staff in partnership with the medical workforce to deliver services. This is an encouraging example of *'Transforming Roles'* which must be recognised and applauded. There is no shortage of well qualified candidates for Clinical Scientist training; each training place attracts several hundred applications. However, the number of training places for Clinical Scientists in these disciplines across Scotland is very limited, and has remained unchanged for the last 12 years. Furthermore, there is no funded mechanism for these scientists to train towards FRCPath. This is in marked contrast to the situation in NHS England, where a Higher Specialist Training pathway is offered. We have seen growing evidence of our newly qualified scientists moving south to take advantage of these posts. If we are to grow a scientific workforce to help bridge the gap in medical provision, this funding shortfall needs to be addressed.

The workforce review group recognised the work of the Scottish Pathology Network (SPAN) in progressing a training school for Biomedical Scientist (BMS) Dissection as another significant achievement in transforming roles that were traditionally medical. The group concluded the need for further exploration of similar initiatives in all disciplines to ensure a multi-professional approach to service sustainability. Recent changes in National training arrangements have provided routes for BMS staff to seek registration as Clinical Scientists, and subsequent progression to FRCPath. One of the limitations for such developments is the difficulty in busy individuals being able to train to higher levels of competence, while still delivering service. The increasing use of support staff to perform, under supervision, roles traditionally performed by registered staff members, offers the opportunity to ameliorate this difficulty. For this to be an effective solution, however, we need to invest more in training our BMS staff in supervisory skills, and invest in structured training for our support staff.

Given the interdependencies of the medical and scientific workforce in laboratory medicine, and the growing emphasis on regional and national planning of laboratory services, it is perhaps surprising that workforce planning activities for these parts of the workforce have been independent of each other. Furthermore, workforce planning for healthcare scientists, if performed at all, has been at health board level. This report recognises the need for a more coordinated approach to workforce planning and training, meeting the realities of supply and demand.

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2. Background

2.1 Laboratory Service Provision

Scotland's laboratory workforce, which includes medical, scientific and support roles, comprises a small proportion (2.5%) of the overall NHS Scotland workforce but has a significant impact on patient pathways. 18 million¹ Haematology, Histopathology and Microbiology specimens are analysed annually, and Biochemistry alone performs in excess of 82 Million tests per year, underpinning a significant percentage of clinical decision making. Rapid, accurate diagnosis is at the heart of improved efficiency in healthcare and improved outcomes for patients.

There are 93 labs in 29 geographical locations in NHS Scotland which range in size and complexity. Some labs in smaller centres focus on the provision of essential tests, referring more specialist testing to tertiary centres. Labs in larger teaching hospitals will provide a full range of lab disciplines alongside a number of specialist tests which they provide on a regional or national basis.

Multidisciplinary team working is a key characteristic of laboratory services; medical, scientific and support staff have each played key roles in ensuring the development and delivery of high quality services. Increasingly, the roles within these teams are changing, with more support staff taking on tasks with increasing levels of complexity, and scientific staff moving into areas previously only able to be delivered by medical staff. This blended approach is likely to prove essential for the future sustainability of services, particularly in those areas where we see significant challenges in medical recruitment.

All lab disciplines are facing increasing workload. From 2013-14 to 2016-17, there was a 41% increase in requests for genetic tests, a 9% increase in Biochemistry requests, and a 2% increase in Microbiology and Haematology requests. Over the next five years it is projected that demand for healthcare in Scotland would rise by 3.5% per annum, based on inflation, demographic pressures, non-demographic growth and the dampening of growth created by efficiency and reforms. This translates to an average annual growth required across the health care workforce of around 1.3%². This translates to workforce growth (based on current model) as follows:-

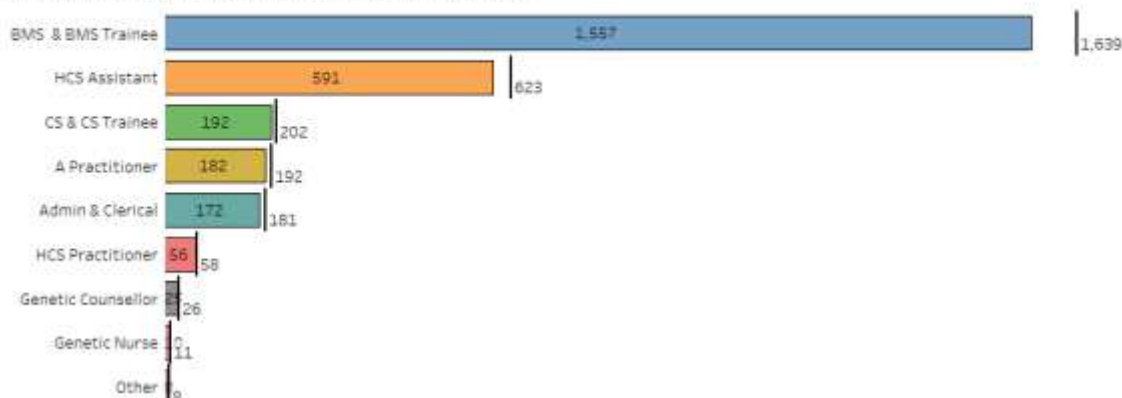
¹ Figures from PHI Costbook <https://www.PHIscotland.org/Health-Topics/Finance/Costs/Detailed-Tables/Laboratory.asp>

² Scottish Government Medium Term Health and Social Care Financial Framework

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WTE Forecast at 1.3% annual

Dashboard - Non Med Band WTE & 5yr Forecast



Dashboard - Med Band WTE & 5yr Forecast

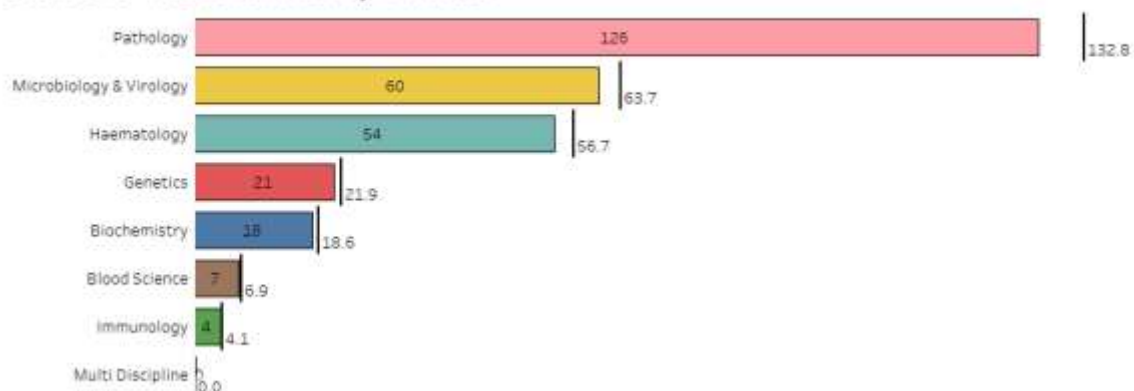


Figure 2: Projected Required Staffing Growth

Labs have been aware for a number of years that the workforce information held by Public Health Intelligence (PHI) does not provide an accurate picture of their workforce. It is driven by a workforce system subject to the variables of local job coding and does not give an accurate picture of the actual clinical and scientific skills mix. Neither does this data provide an accurate picture of the workforce within each of the laboratory sub divisions; such information is essential to inform decisions on training funding and the locations in which we base trainees.

2.2 Strategic Context

The National Laboratories Programme brings a renewed focus on strategic planning for laboratories. Focused on delivery against a three region model, the programme nevertheless encourages a once for Scotland approach to decision making, including areas such as workforce development. Discussions are underway as to how both work and expertise may be more efficiently shared across traditional NHS Board boundaries. Laboratories have long been at the forefront of technological change. Three decades ago, automation transformed the way Biochemistry and Haematology services were delivered. We are potentially at a similar point now with microbiology and histopathology. High throughput automated processors and analysers may significantly alter service delivery models, and hence the

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workforce requirement. There are also a number of emergent technologies, such as digital pathology and artificial intelligence, which mean fundamental change in how the lab workforce operates. Similarly, the greater use of near-patient testing and community based diagnosis and treatment may lead to a shift in where our staff are deployed. The scope of potential change from these developments is the subject of considerable debate within the laboratory community. However, it is universally agreed that the current workforce is under enormous pressure to deliver 'business as usual' with little capacity for major structural change.

Before any meaningful discussion on workforce planning can occur, we must first establish baseline figures which are agreed as an accurate representation of the workforce.

2.3 Establishment of Group

In June 2018, the Diagnostic Steering Group (DSG) convened a subgroup to explore workforce planning issues in laboratory diagnostics. This was in responses to: -

- A number of risks to future service sustainability, raised by diagnostic disciplines (in response to a range of workforce issues, including immediate pressures in cytology services, consultant shortages and a lack of flexibility in the current training approach);
- The workforce transformation ambition in the National Delivery Plan for Healthcare Science;
- Pay protection issues following the implementation of agenda for change;
- Predicted number of retirements in the near future;
- A lack of progress with issues raised in the DSG's 2013 workforce paper.

A group was convened, chaired by Dr David Stirling, Director of Healthcare Science, NHS National Services Scotland (NSS). There was broad representation, including each laboratory discipline represented within the DSG structures, the Scottish Government, NHS Education for Scotland (NES) and staffside. The group, which met on five occasions, was supported by DSG secretariat. The Terms of Reference, including a full list of members, is contained at appendix A.

A major data gathering exercise was undertaken in order to ensure recommendations were based on accurate information. The Information Management Service (IMS) worked closely with laboratory staff to ensure a full and accurate picture of current staffing levels. Where possible this was linked to activity data. The data collected represents a snapshot at a point in time (March 2018), and while still being not fully complete, provides the most accurate picture to date of the diagnostic laboratory workforce.

2.4 The Role of the National Managed Diagnostic Networks

Scotland has formally commissioned National Managed Diagnostic Networks (NMDNs), for the four main laboratory disciplines: -

- Haematology and Transfusion Scotland (HaTS)
- The Scottish Clinical Biochemistry Network (SCBN)
- The Scottish Microbiology and Virology Network (SMVN)

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- The Scottish Pathology Network (SPAN)

The networks bring NHS Boards together to drive service improvement. Each has a work-plan which includes workforce issues, and each is engaged in collecting workforce data on an ongoing basis. For the purposes of this review, the IMS (supported by NMDNs, colleagues from the Molecular Genetics consortium, and from the Immunology community) conducted a full survey of all Boards and all diagnostic disciplines. Laboratory managers were asked to complete a questionnaire for each diagnostic discipline describing workforce numbers and demographics³.

The bulk of the workforce has been broadly described as Scientific or Medical. It should be noted however, that while the training pathways for these staff groups are clearly distinct, there is increasing acceptance that the distinction for many parts of these roles is blurring: Clinical Scientists, qualified to FRCPath working alongside consultant colleagues are performing some tasks which were previously exclusively performed by medical staff. While there are still many responsibilities which require a medical licence, some of the workforce challenges described below may be partially addressed by the use of appropriately trained scientific staff.

Additionally, within genetics, Genetic Counsellors are an essential component of the diagnostic service delivery, so data was also collected for this staff group.

³ Please see appendix B for details of responses.

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3.0 The Scientific Workforce

The majority of the lab workforce is within healthcare science. This relatively new descriptor encompasses Clinical Scientists and Biomedical Scientists (both groups requiring registration with the Health and Care Professions Council), as well as Assistant and Associate Practitioners, Total workforce numbers, by NHS Board, are as follows: -

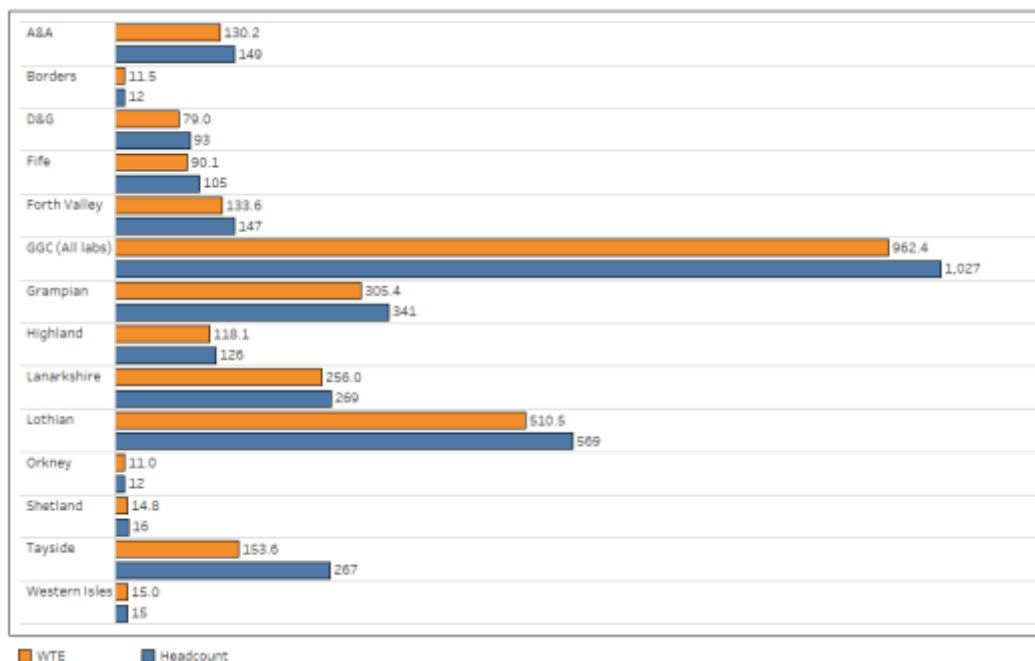


Figure 3: Non-medical – in post – Scotland total – Total headcount & WTE by Health Board

These workforce figures are in-keeping with the size of the NHS Board and their provision of specialist laboratory services.

In some settings, healthcare scientists are appointed to multi-disciplinary roles, perhaps working across blood sciences (e.g. Biochemistry, Haematology and immunology), whilst in other labs staff are appointed for one discipline⁴. The breakdown by discipline is as follows: -

⁴ Please see appendix B for further details

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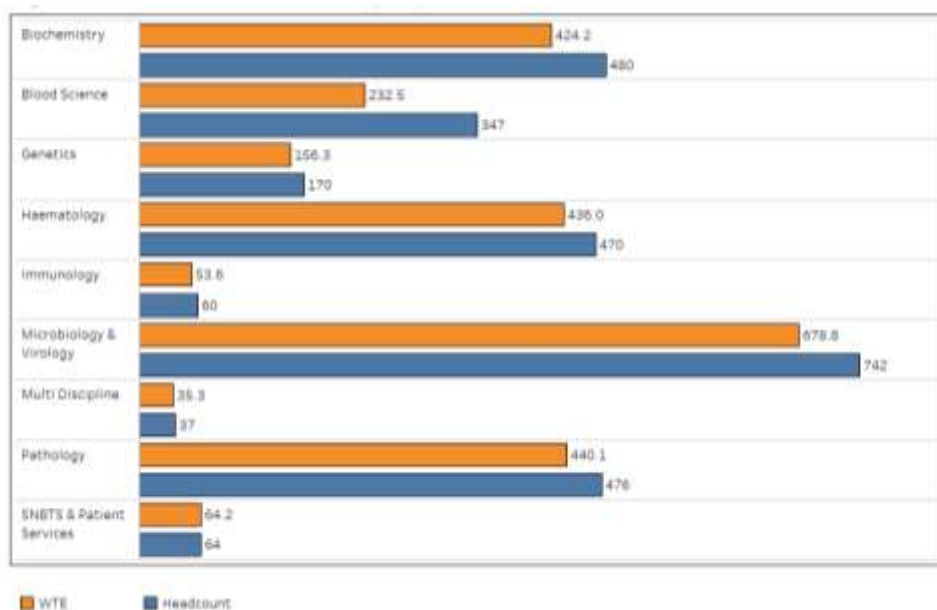


Figure 4: Scotland totals – Total headcount & WTE by discipline

Given the number of healthcare scientists who work in a multidisciplinary environment, specialist training is required to support the development of such roles, in a manner that would allow tracking of career progression. Many of our remote and rural laboratories rely on multidisciplinary staff, yet our approaches to training are focussed largely on single discipline routes.

When we consider NHS Board alongside discipline, the healthcare science workforce picture is as follows: -

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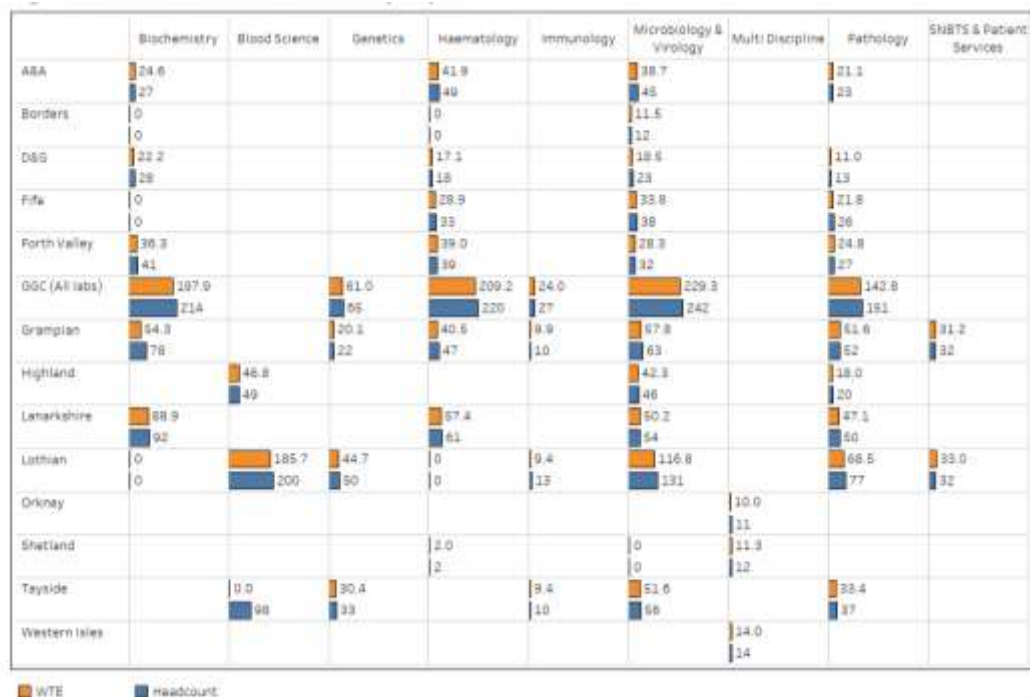


Figure 5: NHS Board totals – Total WTE & Headcount by discipline

The first striking observation is the difference between the published PHI statistics, and the data collected here. For Dec 2017, PHI data record 4,526 Healthcare Science staff in Life Sciences, including 3,189 Biomedical Scientists, and 797 Clinical Scientists. The data here, gathered directly from service, identifies 2620 Healthcare Science staff, including 1,557 Biomedical Scientists and 192 Clinical Scientists. Thus the PHI data represents an **over-estimate of 104% of BMS staff and 315% of Clinical Scientists.**

There may be multiple reasons for these discrepancies, including life scientists working out-with laboratories, potential misclassification of other staff groups within the healthcare science coding, and the miscoding within healthcare science between Physiological, Life and Physical Sciences. Whatever the reasons, it is clear that we cannot rely on published PHI figures to plan the future laboratory workforce.

Recommendation 1

Systematic data collection should continue through the NMDNs, informed by their specialty-specific expertise, supported by their Information Management Service and working with NHS Education for Scotland to improve the quality of Scottish Laboratory Workforce data.

Workforce Supply

A limited number of Clinical Scientist training posts are funded through NES each year. These are three-year supernumerary posts, leading to assessment for HCPC registration as Clinical Scientists. While the accepted benchmark for Consultant Clinical Scientist roles is FRCPath, there is no supported route to deliver training to this level. Those individuals who have achieved this have done so in addition to often very busy jobs, with little or no financial support. This is in marked contrast to the situation in England where individuals are

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supported through the National School for Healthcare Science through a Higher Specialist Scientist Training (HSST), including FRCPPath. There is growing evidence of our Clinical Scientist trainees moving south on completion of their registration training, to take up HSST posts.

Currently most of our Biomedical Scientist staff will enter the profession after completing an Institute of Biomedical Science (IBMS) accredited undergraduate degree. This degree offers laboratory placements through which students undertake the registration portfolio. Upon graduation, students are eligible to apply for Health and Care Professions Council Registration as a Biomedical Scientist. In Scotland, there are currently five universities which offer this programme: Glasgow Caledonian; Strathclyde; University West of Scotland; Robert Gordon's and Abertay. Many Biomedical Scientist staff continue on to further training (including professional body qualifications in expert practice, MSc or PhD), and a number have now completed work to demonstrate equivalence for Clinical Scientist registration.

Biomedical support worker vacancies usually attract a large number of applicants with degrees from non-accredited programmes. Many of these individuals were unaware of the opportunities for a career in Laboratory medicine while applying for University entrance, and were also unaware of the requirement for an accredited degree. Staff members can be supported by the department to undertake the further education required to enable HCPC registration as Biomedical Scientists, however, due to the lack of appropriate part-time educational programmes, they often leave the profession to undertake education full-time.

Recommendation 2

Develop an approach to raise the profile of Life Sciences and the career opportunities within Schools, colleges and universities

There is currently little provision for young people leaving school to enter laboratory medicine and follow an apprenticeship programme to HCPC registration. This approach, if developed, could provide another route of entry in to the profession and be used as a "grow your own" approach for future workforce planning.

Recommendation 3

Develop an early career apprenticeship programme to be used as another route of entry into the profession.

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Modernising Scientific Careers: Career and Training Pathways

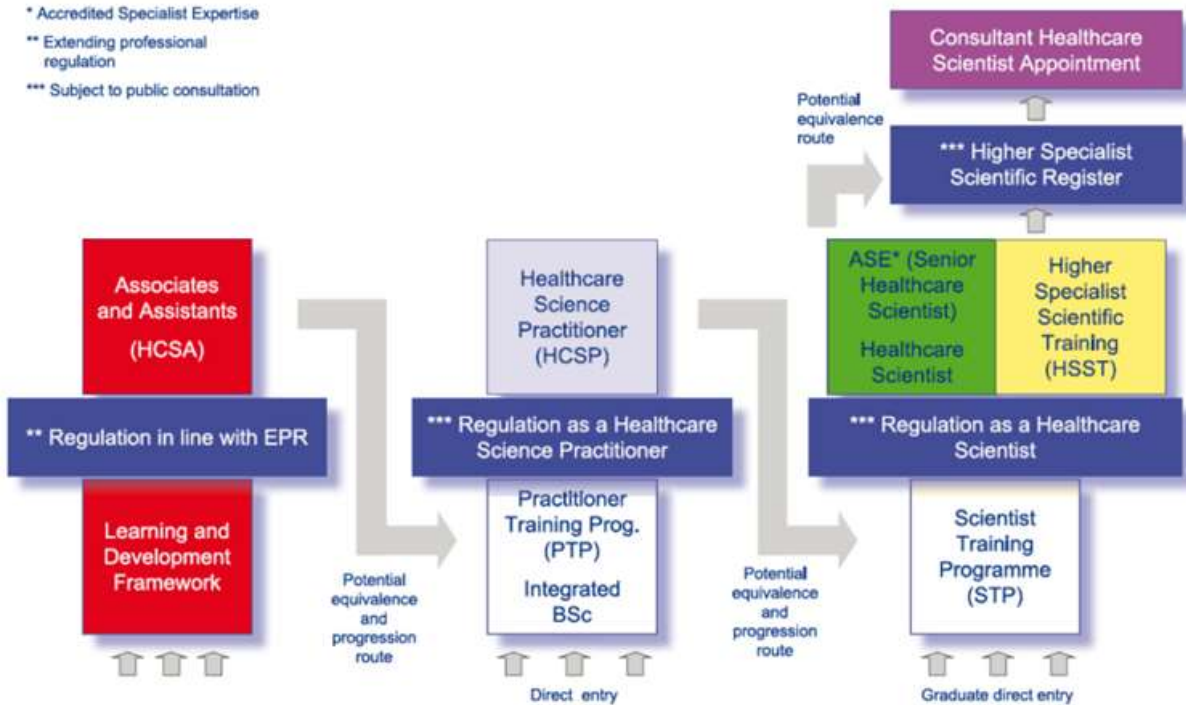


Figure 6: Career Training Pathways⁵

Scotland's total headcount of healthcare scientists working in labs, broken down by agenda for change bands, is as follows –

⁵ <http://www.acb.org.uk/images/default-source/website-images/mscpathwayslide.png>

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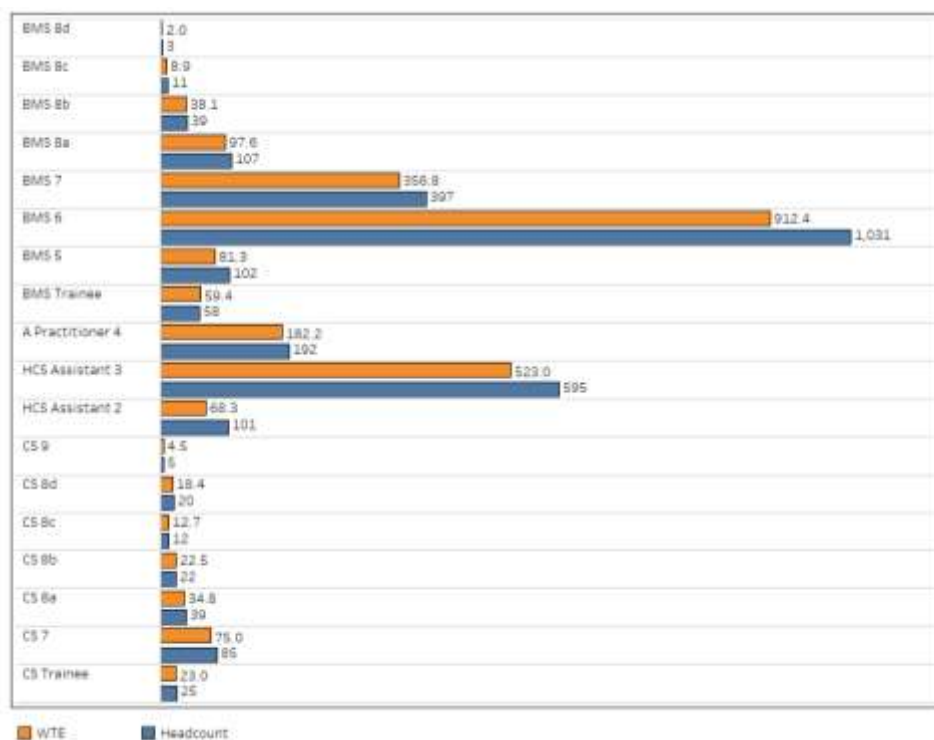


Figure 7: Scotland total – Total WTE & Headcount of Lab Staff by band

As we can see from the table above, there is a predominance of band 6 roles. In most boards, this represents the entry point for the staff group who contribute to the out-of-hours service. As this requires both unsupervised autonomous working, and often lone working, it requires registration with the HCPC. Staff who are not registered may perform many of the same tasks under supervision.

Given the unreliability of the PHI figures, long term trend analysis of staff numbers is difficult. The Scottish Pathology Network has been gathering comprehensive workforce and activity figures for a number of years. This data shows a **10% decrease in the number of registered Biomedical Scientists** employed within Pathology between 2013/14 and 2017/18 (from 296.89 to 265.31). The effects of this reduction has partly been ameliorated by increasing numbers of support worker staff (an additional 51 staff employed over the same period), however this has inevitably resulted in a dilution of the expertise within the scientific staff and an increase in the amount of supervisory work for the registered Scientists. While the expansion of roles for support workers is to be welcomed, the reduction in numbers of Biomedical Scientist staff to deliver the necessary supervision, develop laboratory science and who are potentially able to undergo further training into extended roles such as BMS dissection and supervised reporting is a concern.

Across Scotland the ratio of registered to unregistered scientific staff is 2:08, however this varies both between disciplines (from 1:3 in Pathology to 3:0 in Haematology) and between boards. There is general acceptance that many of the tasks undertaken by registered Biomedical and Clinical Scientist staff could be performed by suitably trained unregistered staff. There is evidence across the service of Biomedical scientist vacancies being reviewed, and decisions taken to replace with support staff. While this may be an appropriate long term adjustment to laboratory skill mix, it needs to be more carefully

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managed. Consideration must be taken of the training and ongoing supervision of support staff. Boards and regions should determine their optimal model and workforce profile, and then manage any transition towards this, ensuring the resource for training and supervision is identified.

The last two decades have seen a major increase in the amount of administrative work needed to support quality management and accreditation. Over the same time period, many NHS Boards have reduced Administrative and Clerical (A&C) support. The net effect is that many of our highly trained scientific staff spend a large proportion of their time performing A&C tasks.

Recommendation 4

Workforce planning should be carried out within each board/region to determine the optimal workforce profile for the future service model, including the appropriate use of A&C support.

Recommendation 5

Networks should continue to progress their workforce work streams, with particular support for transformational roles and the development of communities of practice for advance practice roles.

Recommendation 6

Workforce planning should take account of the increased training and supervision requirements for support roles, as well as the impact on the potential pool of staff suitable to train for extended roles.

Particular difficulties exist within small and remote and rural laboratories where staff are often required to work across several disciplines. Staff training in such environments can be challenging, both because of limited training resource and because of a lack of accredited training opportunities in multidisciplinary settings. Biomedical Science progression is currently based on specialist knowledge, rather than breadth of knowledge and experience across several disciplines. Scottish Government is currently engaging with the Institute of Biomedical Sciences to explore the development of sustainable service models for Scotland.

Recommendation 7

Scottish Government to continue to work with IBMS over multidisciplinary specialist portfolio suitable for R&R setting.

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Workforce age profile is illustrated in figures 7 and 8 :-

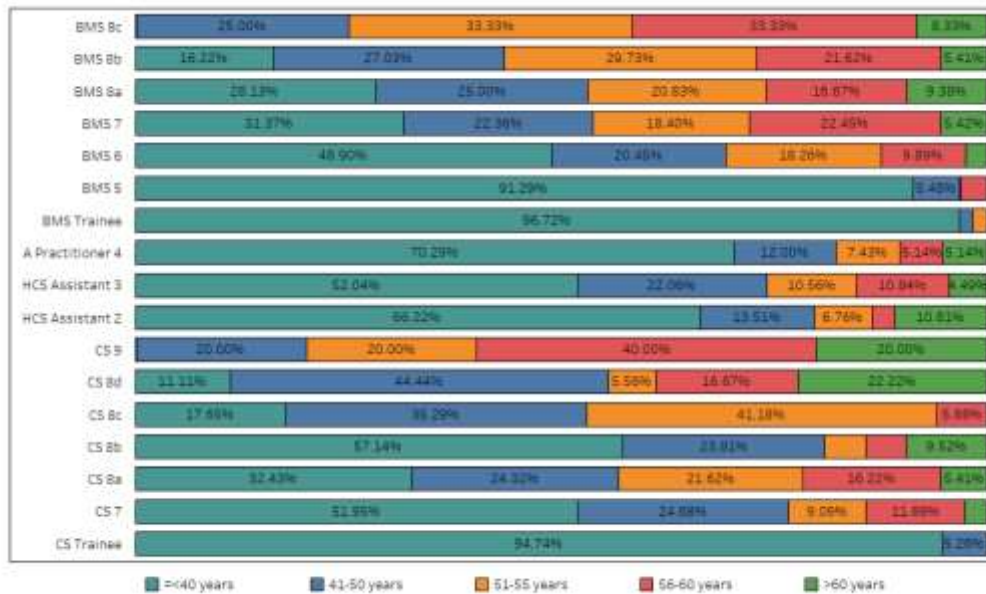


Figure 8: Scotland total – Total headcount by band, coloured by age

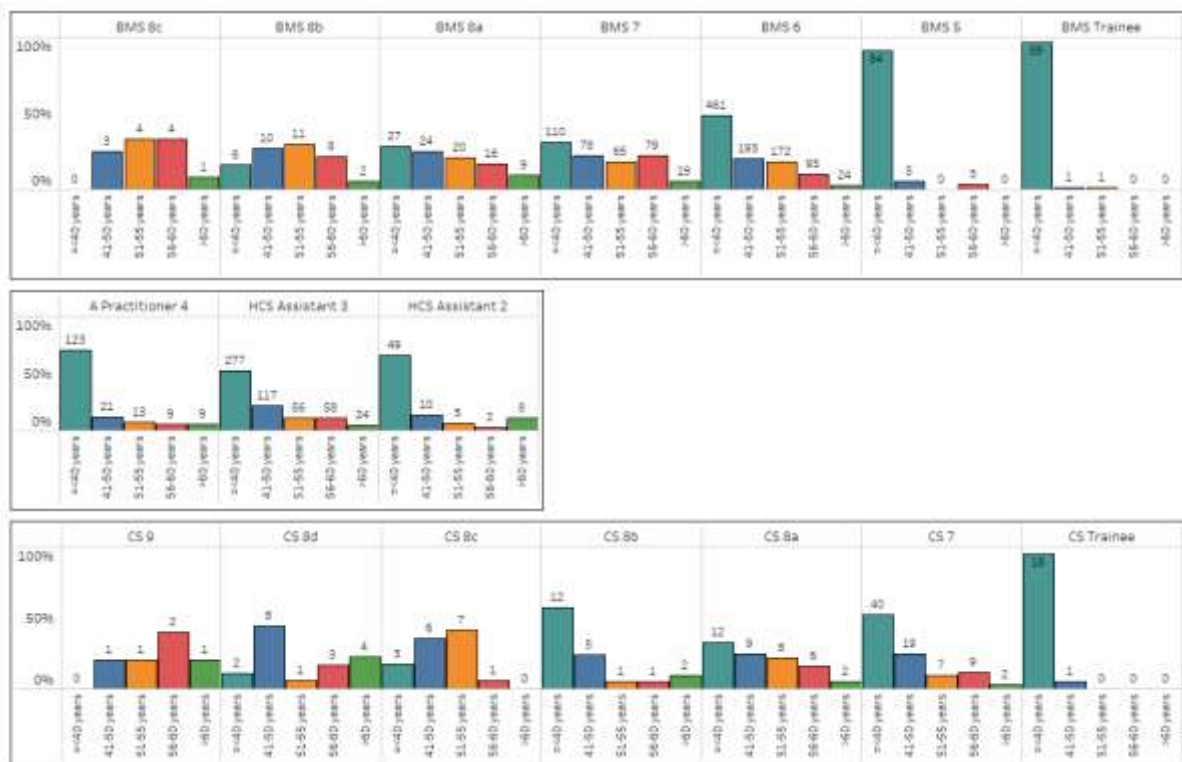


Figure 9: Headcount by Band & Age

From the data above, we can see a significant number of retireals are predicted in the next seven years, meaning that much of the more experienced workforce will be lost from the

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service. Contributing to the overall picture of a lack of available workforce is of course the vacancy rate, which varies from around 10-20% as follows: -

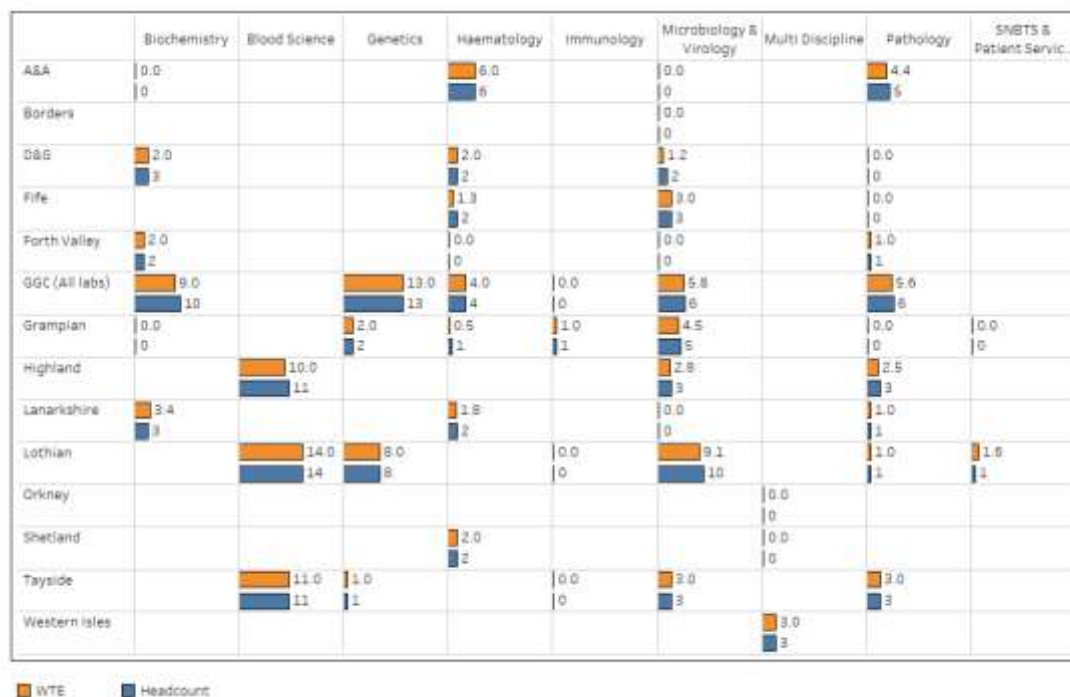


Figure 10: Non-medical vacancies – Scotland total – Vacancies by health board & discipline

The headline predicted retirements by 2025 (10.5%) suggests an urgent need to ensure training numbers are adequate to replace outgoing staff. Unsurprisingly, a higher proportion of staff approaching retirement are in more senior positions within laboratories, often with skills, knowledge and experience gained over many years. These staff are not easily replaced.

One of the observations made repeatedly during this review was the reluctance among staff to move into promoted posts, when they are currently in posts where their out-of-hours payments are subject to pay protection as a result of the transition to Agenda for Change. This has interrupted the natural progression of individuals through the career pathway, and has resulted in many promoted posts being filled by relatively inexperienced staff, not on pay protection. (The data shows for both band 7 and band 8a posts, the most frequent age group is under 40). The move towards regional delivery models creates opportunities for sharing of specialist scientific and managerial expertise between boards, but this needs careful management to ensure staff in higher bands are appropriately supported. NHS Education Scotland offer both early career leadership training and refreshing leadership training for those further on in their career. There are opportunities for regional Lab structures and NMDNs to explore the establishment of communities of practice and training packages to support continued development of staff into senior roles.

Recommendation 8

NES should work with Regional lab leads, and Managed Diagnostic Networks to explore the coordination of training packages to support staff moving into senior roles within laboratory diagnostics.

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While ensuring the sustainability of the existing scientific workforce is critical, there are other demands on the scientific workforce which need to be considered. Pressure on the Medical workforce within laboratory medicine (below) is increasing. There is growing concern that we will not be able to recruit or train sufficient numbers of medical consultants to meet the requirements of the service. One potential route to ameliorate this problem is to use more scientific staff to support the medical workforce. Routes exist for Scientists to achieve FRCPath, widely recognised as the level of competence required for such roles; however, the training of Scientific staff into these roles requires both the release of some of the scientists' time for training, and the identification of appropriate clinical trainers/mentors. NHS England have adopted a pathway for Higher Specialist Scientific Training (HSST) to achieve this, but requests for funding for such a proposal in Scotland have to date been unsuccessful.

The funding settlement for Healthcare Scientists is wholly inadequate. Whereas other registered professionals have structured support, with Training Programme Directors and a Specialty Training Board structure, Healthcare Scientist training largely depends on willing volunteers with little or no support or governance. While NES has a Healthcare Science Programme, and has been attempting to bring training for this group of staff in line with that of other professional groups, the fundamental issue is lack of funds. If we hope to train Scientific staff into roles abler to support medical colleagues, we must address the disparity in resource for educational support.

Recommendation 9

Managed Diagnostic Networks should agree where opportunities exist for Higher Specialist Scientist roles.

Recommendation 10

Scottish Government Healthcare Science Education advisors and NES should develop a business case for training support for Higher Specialist Scientist roles.

Recommendation 11

NHS Boards and regional structures should cooperate to offer enhanced training opportunities for Scientists moving into Higher Specialist roles.

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4. The Medical Workforce

The Medical workforce within laboratories is more difficult to quantify. In some areas medical staff may not be part of the laboratory management structures, but rather, for example, cancer services, with a defined number of sessions supporting laboratory activities. Other colleagues hold dual appointments between NHS and a University, and have major teaching and research commitments. The picture is further complicated by the understanding of what constitutes a full time equivalent post, with many colleagues working on an 11 or 12 session basis.

This review sought to simplify this by asking for the number of medical sessions directly attributable to laboratory leadership/support. While this seeks to describe the laboratory service requirement, it is inevitably flawed in a number of ways. Workforce planning for this group of staff must consider the entirety of the requirements of the role, not simply those elements directly attributable to laboratory support. If each consultant were to contribute 0.2 WTE to laboratory support, then a workforce plan requiring 1 FTE medical consultant will require 5 consultants trained through to FRCPath, and we train whole people whatever their ongoing contribution to various components of work might be. For the purposes of this report 1 WTE is equivalent to 10 sessions.

A recent report from the Royal College of Pathologists on a 2017/18 histopathology workforce census identified only 3% of UK labs had enough staff to meet clinical demands, a situation which is not quickly remedied, as it can take up to 15 years to train a pathologist, and newly trained pathologists report less than their more experienced colleagues¹. The UK estimate for the annual costs of locums and outsourcing for histopathology alone is £27M.

The medical workforce across the disciplines can be illustrated as follows:-

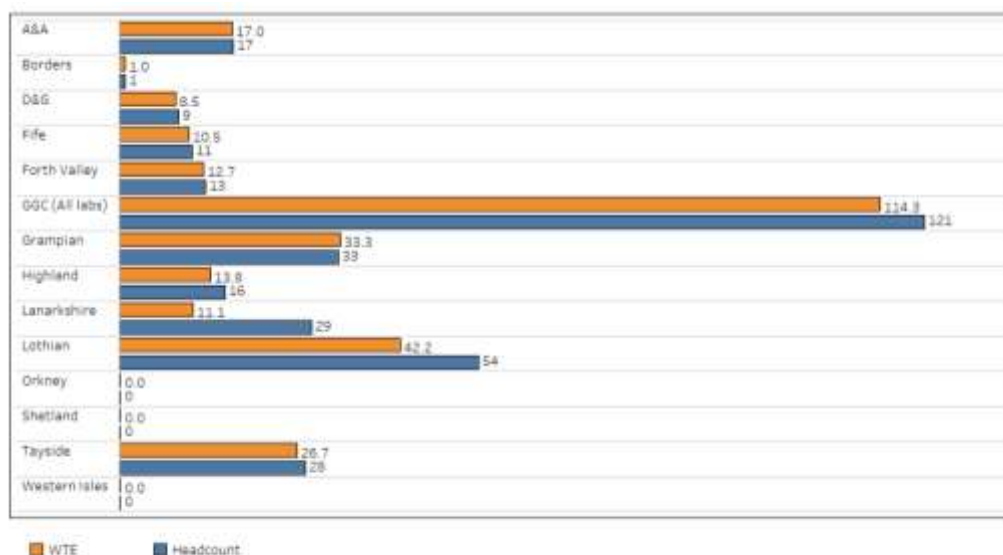


Figure 11: Medical Staff In Post – Medical WTE & Headcount by HB (in post)

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This can be broken down by discipline as follows:-

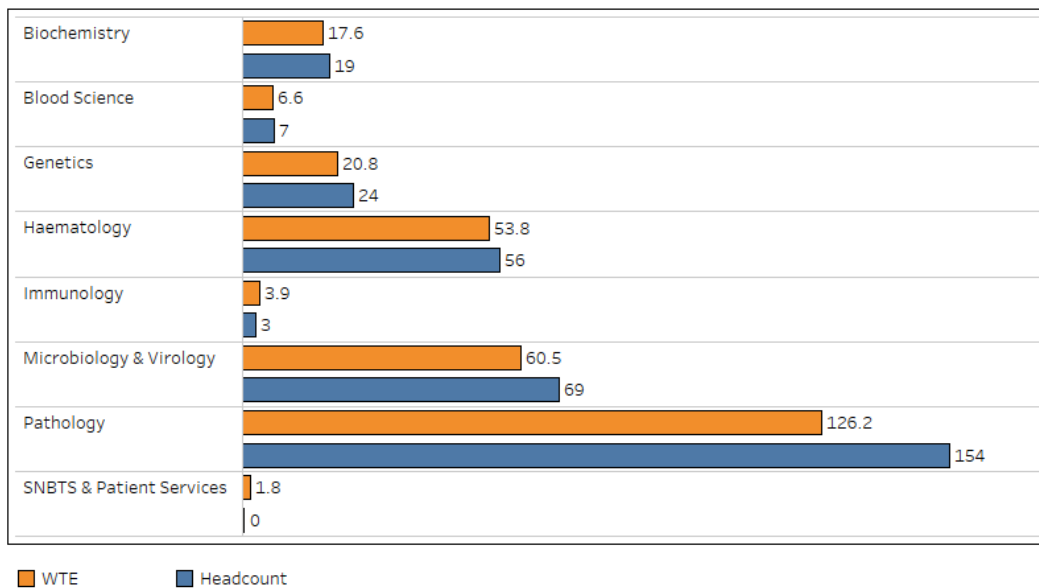


Figure 12: Medical WTE & headcount by discipline

Across NHS Boards this breaks down as follows: -

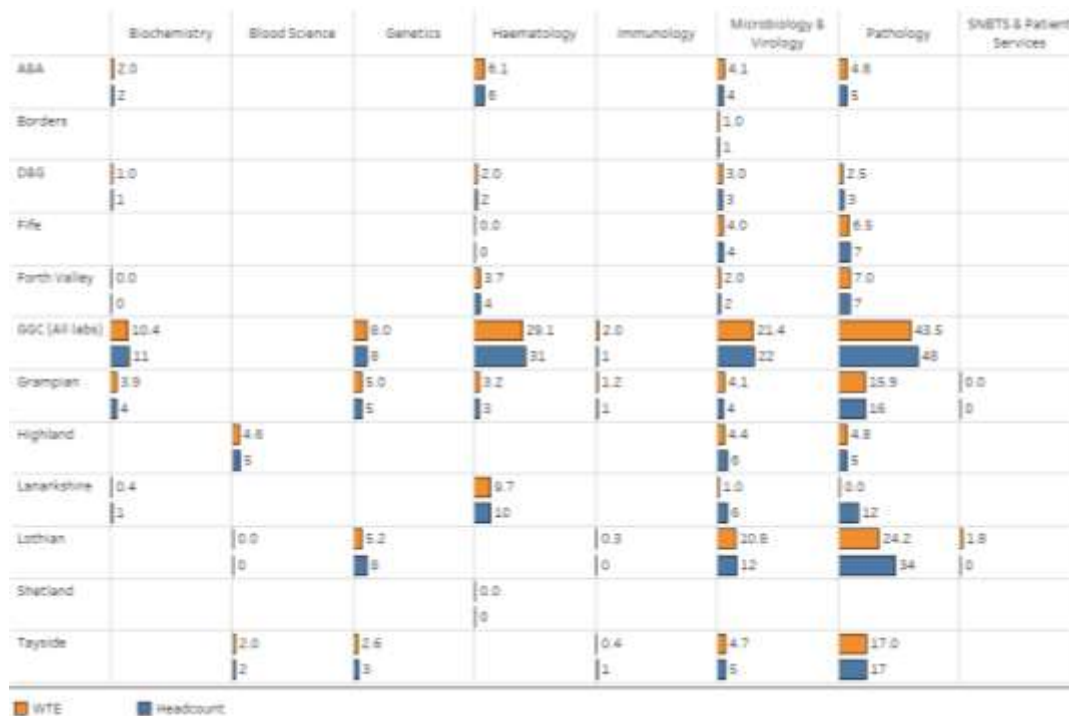


Figure 13: Medical WTE & headcount by discipline and NHS Board

One striking feature of the data is the number of very small teams working in individual Boards and specialties. Under such circumstances, even a single vacancy can have a major impact on service delivery.

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Looking at the age profile, this is: -

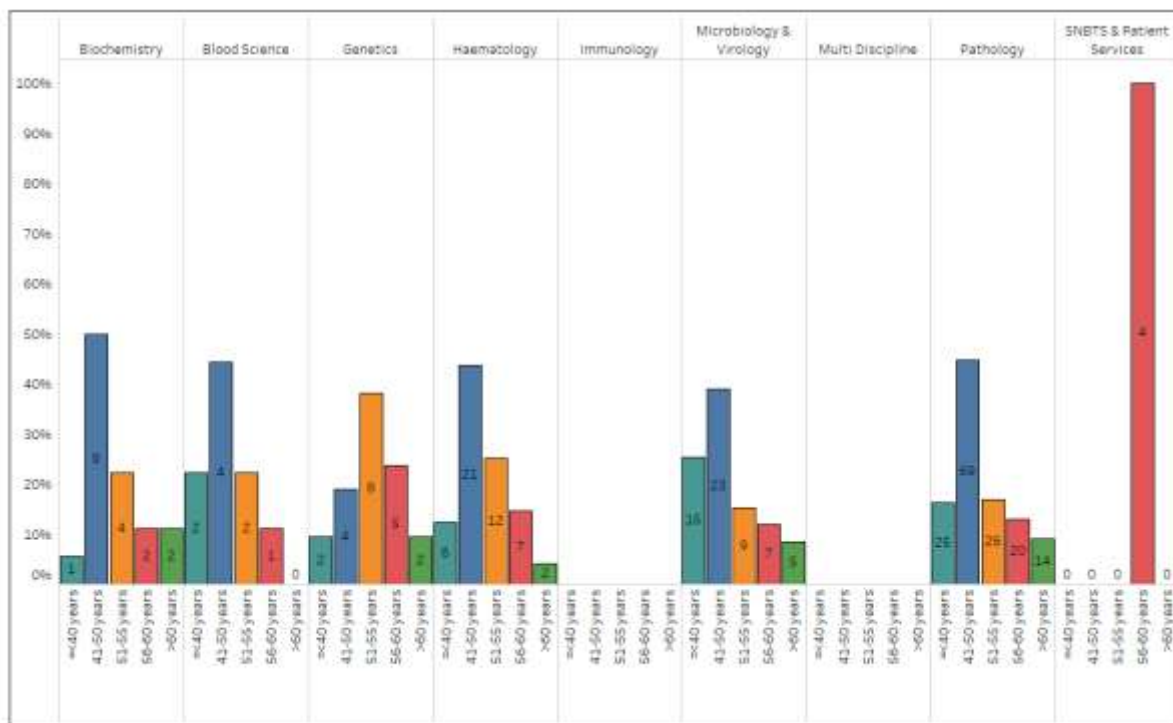


Figure 14: Medical Headcount by Age Histogram

There are a number of vacancies across the disciplines, as follows: -



Figure 15: Medical Vacancies (Posts)



Figure 16: Medical Vacancies PAs

The most recent intake of trainees in Histopathology filled all training places; this had not been the case for the preceding three years. Even if we were able to continue to fill all training places, current trainee numbers in Histopathology are inadequate to replace the

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predicted losses to service over the next 10 years, and there is no pool of trained pathologists elsewhere from which we can recruit.

Several of the recommendations with the FRCPath report are currently being developed across Scotland, including improved laboratory information systems and digital pathology solutions. The need for more medical trainees has been acknowledged by Health Education England³. In Scotland, there is an assumption of an increase in trainee establishment by 1% per annum. As many Pathology disciplines are small, this increase is negligible if seen at all. While Radiology is the focus for 50 new trainees between 2013 and 2018, there is no similar planned expansion in laboratory specialties. NHS Scotland has re-established the numbers of trainees in Histopathology to levels that preceded the reductions 7-8 years ago, however, this is largely outweighed by the need to find trainees in new CCT programmes in Paediatric Pathology, Diagnostic Neuropathology and Forensic Pathology because they enter training at ST3 from Histopathology. In effect, there has been no increase in Histopathology trainee establishment over the last 10 years. Chemical Pathology has remained static in numbers. Haematology has seen small increases in line with other specialties. The issues around Medical Microbiology and Medical Virology include the introduction of a new training route (Combined Infection Training; CIT) in 2016. Overall trainee establishment has been unaltered. Clinical Genetics and Immunology posts have proved to be hard to fill and so have been mostly empty. Scottish Government does not look towards increasing establishment in specialties which are hard to fill, compounding the lack of desirability. Furthermore several key recommendations have yet to gain traction in Scotland, including *'development of advanced clinical practitioner apprenticeships, helping more biomedical scientists to become independent practitioners, who can then work alongside medically-qualified histopathologists and increased funding to train more existing scientists to dissect and report and the development of a revised scientist training programme/higher specialist science training (STP/HSST) for histopathology to produce a cohort of advanced practitioners able to work alongside medically-qualified histopathology colleagues'*.

While the national data is most complete for Histopathology, similar conditions exist in each of the other diagnostic disciplines. Within Microbiology, there are additional pressures, due to the changes to training pathways arguably favouring the ward and clinic-based specialty Infectious Diseases (ID), as the programme is a prerequisite for Infectious Diseases as well as the laboratory specialties. Many trainees seek careers in ID, linking that with General Internal Medicine, resulting in fewer trained consultants with the expertise or interests to deliver laboratory microbiology and virology. There is urgent need to define the service model for this group of specialties in Scotland because at the moment the threat is seen as a medium term high risk to the sustainability of laboratory Medical Microbiology and Medical Virology.

Recommendation 12

Specialty training numbers should be reviewed in light of anticipated retiral rates, and vulnerability of services.

More trainees may be an ambition; however, we also have particular issues around recruitment and retention at consultant level out-with the central belt. There may be merit in exploring the distribution of trainees around Scotland. The advent of digital pathology will

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potentially facilitate access to the same range of cases in Inverness or Dumfries as is seen in larger laboratories. A further threat to training currently is that educational roles seem to be less attractive to medical consultants than in the immediate past. The explanation for this is felt to reflect work pressure, a perception of increased administration and regulation and unwillingness to take on extra sessions because of current UK pension regulations.

Recommendation 13

Training Placements should be reviewed to increase training provision within areas in which it has proven difficult to recruit Consultant medical staff.

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5. Conclusion

NHS Scotland is facing a significant crisis in its laboratory workforce which will have an impact throughout the patient journey. A solution is required which addresses the problem holistically, delivering a sustainable service through a meaningful union of scientific and medical workforces and helpful use of A&C staff.

This work has concluded that the data on which workforce planning in labs has been based to date does not provide an accurate picture of staffing levels and there is a need to address how figures are recorded going forward.

The group reviewed the recommendations from the 2013 DSG Workforce Planning report and noted that, in the absence of a delivery vehicle, work was not progressed. The group concluded the need for ongoing governance, functioning as a subgroup of DSG, appropriately supported to oversee the implementation of the emergent recommendations.

Whilst the snapshot data exercise has been successfully concluded by the group, it is acknowledged that there is significant further work to do to ensure that the issues emerging from discussion and analysis of data are progressed.

The work of the Scottish Pathology Network (SPAN) in progressing a training school for BMS Dissection was highlighted as a significant achievement in transforming roles that were traditionally medical. The need for increased investment in laboratory scientist workforce to enable this is apparent. The group concluded the need for further exploration of similar initiatives in all disciplines to negate the reliance on medical roles and ensure a multi-professional approach to service sustainability.

Fundamentally, the group concluded that a different approach to workforce planning and design is needed. This must include imaginative approaches to training and transformative roles, ensuring that NHS Scotland can build a workforce capable of delivering a sustainable service model.

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6. Recommendations

The DSG Workforce Planning Subgroup makes the following recommendations for NHS Scotland's laboratory workforce: -

1. Systematic data collection should continue through the NMDNs, informed by their specialty-specific expertise, supported by their Information Management Service and working with NHS Education for Scotland to improve the quality of Scottish Laboratory Workforce data.
2. Develop an approach to raise the profile of Life Sciences and the career opportunities within Schools, colleges and universities.
3. Develop an early career apprenticeship programme to be used as another route of entry into the profession.
4. Workforce planning should be carried out within each board/region to determine the optimal workforce profile for the future service model, including the appropriate use of A&C support.
5. Networks should continue to progress their workforce work streams, with particular support for transformational roles and the development of communities of practice for advance practice roles.
6. Workforce planning should take account of the increased training and supervision requirements for support roles, as well as the impact on the potential pool of staff suitable to train for extended roles.
7. Scottish Government to continue to work with IBMS over multidisciplinary specialist portfolio suitable for R&R setting.
8. NES should work with Regional lab leads, and Managed Diagnostic Networks to explore the coordination of training packages to support staff moving into senior roles within laboratory diagnostics.
9. Managed Diagnostic Networks should agree where opportunities exist for Higher Specialist Scientist roles.
10. Scottish Government Healthcare Science Education advisors and NES should develop a business case for training support for Higher Specialist Scientist roles.
11. NHS Boards and regional structures should cooperate to offer enhanced training opportunities for Scientists moving into Higher Specialist roles.
12. Specialty training numbers should be reviewed in light of anticipated retiral rates, and vulnerability of services,
13. Training Placements should be reviewed to increase training provision within areas in which it has proven difficult to recruit Consultant medical staff.

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7. Definitions

8. Associated Documented Information

Document Ref

Document Title

	2013 Report

9. Document Revision History

For activation dates, refer to Q-Pulse.

Version	Description of Amendments
0.0	Draft for input
0.1	Input from Dr Stirling, some data added
0.2	Some data added
0.3	Input from Dr Stirling
0.4 – 0.9	Emma Lewis
0.10	Data updated by P Cottam, Proof reading by L Blackman
0.11	Feedback from SLWG

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Appendix A – Remit & Membership

Draft Terms of Reference

Diagnostic Steering Group (DSG)

Workforce Planning Subgroup

Purpose

The purpose of the DSG is to ensure the continued coherent development and delivery of high quality diagnostic services; taking into account the strategic direction set by the Health and Social Care Delivery Plan and the National Clinical Strategy, in particular the effective and safe quality ambitions.

Project subgroups are set up as required to work on specific projects as requested by the DSG. These consist of interested parties with experience and expertise relevant to the project concerned.

Mandate

DSG's remit includes "making recommendations on workforce development and planning, and work in partnership with NES on educational requirements and provision". This was highlighted by the DSG Advisory Group, who agreed to develop a cross-discipline workforce issues paper which would be submitted to DSG. This was endorsed in September 2017 by the DSG to progress the work, in which they noted the need to consider advancing technology, differing regional workforce plans and synergies with the regional delivery plans.

It was agreed a short life working group would be established, as a subgroup of DSG, linking with other national work and initially focused on laboratories

Remit

The DSG Workforce Planning Subgroup will: -

- Develop a cohesive workforce plan for diagnostics in Scotland, initially focused on the laboratory disciplines (including medical and healthcare science roles), but with scope for further work with Physiology, Physical Sciences and imaging.
- Review the previous report by the DSG Workforce Planning Subgroup in 2013 to identify areas where an update is required
- Compile workforce data across all laboratory disciplines to build an accurate snapshot of current workforce as well as projections for future workforce
- Explore synergies with other national and regional initiatives, including the national Health and Social Care Workforce Plan, Regional Workforce Plans and Regional Delivery Plans

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- Consider the implications of advancing technology on workforce requirements.
- Link with NES to explore the future of trainee posts
- Link with Scottish Government's Healthcare Science Lead and Workforce Lead to understand the scope of the healthcare science role and how this can be maximised to make a positive contribution to workforce planning
- Take cognisance of the emerging vision of a distributed service model and seek to address workforce planning to support the implementation of the new model

Composition

Chair

Dr David Stirling, Director of Healthcare Science, NHS National Services Scotland

Membership

The group would include representatives from:

- Scottish Government's Workforce Planning Group – Grant Hughes
- Staffside – Linda Delgado
- NES – Rob Farley
- Scottish Government Healthcare Science Leads – Karen Stewart
- Scottish Government Healthcare Science Workforce Lead – David Ashburn
- Diagnostics Specialty Training Board and Royal College of Pathologists – Peter Johnston
- Shared Services – Kim Walker
- Early Careers and Apprenticeships – Susan Smith
- Scottish Pathology Network (SPAN) – Allan Wilson, Liz Mallon
- Scottish Clinical Biochemistry Managed Diagnostic Network (SCBMDN) – Ian Godber
- Scottish Microbiology and Virology Network (SMVN) – Tom Gillespie
- Public Health Microbiology - David Yirrell
- Immunology – Liz Furrie
- Haematology - tbc
- Transfusion – Rachel Green
- Genetics – David Baty
- Information Management Services – Claire Lawrie
- In addition, it was noted there was a need to ensure medical training from NES, representation for CMO and CSO offices and regional workforce planners had appropriate links into the work. Professional bodies should also be engaged. There should also be clear reporting back to professional bodies.

Secretariat

Mrs Liz Blackman, Senior Programme Manager, NHS National Services Scotland

Ms Grace Cervantes, Programme Support Officer, NHS National Services Scotland

Miss Emily Ross, Programme Support Officer, NHS National Services Scotland

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Meetings

- Meetings will be held at regular intervals.
- Video conferencing whenever possible will be made available.
- The meetings will be chaired by Dr David Stirling
- Actions, minutes and papers will be circulated in a timely fashion

Accountability

The group is accountable to the Diagnostic Steering Group, with reporting to be established to Scottish Government's Workforce Planning Group.

Diagnostic Steering Group meetings are scheduled on the following dates:

6 September 2018

5 December 2018

7 March 2019

6 June 2019

5 September 2019

5 December 2019

Each member of the group has responsibility for:

- Understanding their role in the group and who they are representing on the group, ensuring that there are mechanisms in place to cascade information back either to their NHS boards / to their discipline or both, as appropriate.
- Ensuring that there are mechanisms in place for members of the discipline/NHS Board they are representing to feed relevant issues into the group, as appropriate.
- Noting down all actions allocated to them at meetings and completing them within agreed timescales
- Advising if they are unable to attend a meeting, and where possible and/or appropriate nominating a deputy

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Appendix B – Contributions by NHS Board

The table below outlines the responses received by NHS Boards, highlighting how each has responded, i.e. where there has been a combined blood sciences response and where the response has been by individual discipline.

	Biochemistry	Blood Science	Genetics	Haematology	Immunology	Microbiology & Virology	Multi Discipline	Pathology
A&A	✓			✓		✓		✓
Borders						✓		
D&G	✓			✓		✓		✓
Fife				✓		✓		✓
Forth Valley	✓			✓		✓		✓
GGC (All labs)	✓		✓	✓	✓	✓		✓
GJNH	✓			✓		✓		
Grampian	✓		✓	✓	✓	✓		✓
Highland		✓				✓		✓
Lanarkshire	✓			✓		✓		✓
Lothian		✓	✓		✓	✓		✓
Orkney							✓	
Shetland							✓	
Tayside		✓	✓		✓	✓		✓
Western Isles							✓	

Figure 17: Contributions by NHS Board