



The Royal College of Pathologists

Pathology: the science behind the cure

The haematology laboratory workforce: challenges and solutions

A Meeting Pathology Demand briefing

Introduction

As part of the Royal College of Pathologists' Meeting Pathology Demand series, we carried out a survey of the haematology laboratory workforce, to help determine whether there is the right number of staff with the right skills in the right places to ensure safe and effective high-quality patient care and support. Like many pathologists, haematologists have a role in the direct management and treatment of patients as well as undertaking diagnostic work in the laboratory.

This briefing contains the findings of our survey, which was sent to clinical directors and heads of haematology departments across the UK between December 2018 and September 2019. In particular, it focuses on the laboratory, rather than clinical, commitment of haematologists. The British Society of Haematology carried out its own review of the UK haematology clinical workforce over a similar period and we welcome the results of that report.¹

The results of our survey highlight the challenges facing haematology. We have made recommendations for solutions to those challenges and set out the commitments the College is making to help alleviate the problems facing haematologists.

What is haematology?

Haematology involves the diagnosis and treatment of patients who have disorders of the blood and bone marrow. While a large amount of a haematologist's time is spent providing direct clinical care to patients, diagnostic work in the laboratory is also a significant part of the workload of many haematologists. It is crucial to the delivery of high-quality patient management and care.

Who are haematologists?

Haematologists are both clinicians and laboratory specialists. They:

- work within specialty clinical teams, taking full clinical responsibility for patients with a wide range of haematological disorders, including cancers (such as acute and chronic leukaemia, lymphoma, multiple myeloma), blood clotting disorders, bone marrow failure, anaemia and autoimmune blood diseases, and genetic conditions (such as sickle cell disease, thalassaemia and haemophilia)
- provide interpretation of laboratory results and advise other hospital clinicians and healthcare professionals as well as GPs on appropriate clinical management of patients in a range of healthcare settings. Haematologists will do invasive diagnostic tests such as bone marrow aspirate and interpret the results themselves.
- provide professional direction and have clinical responsibility for haematology and transfusion laboratories
- provide laboratory, clinical and consultative services 24 hours a day, 7 days a week.

Medically qualified haematologists have a dual clinical and laboratory role and take an active part in every stage of patient management, from the initial clinic visit to laboratory tests, assessment and diagnosis, and finally treatment. They are able to understand laboratory test results and interpret them for patients and other healthcare professionals, therefore taking a holistic overview of the care of patients, including those that are critically ill.

The College considers this duality to be key to the delivery of care for patients and that the expertise of haematologists is central to patient management and care; for example, by advising GPs and doctors in other specialties on the best tests to perform, and interpreting and communicating the significance of the test results. For haematology consultants to continue to provide diagnostic laboratory services, including laboratory diagnostics, interpretation of results and liaison with other medical professionals, there needs to be a commitment by employing bodies to support and expand these services, which has implications for the workforce.



Findings

The combined response rate to our survey for the UK was 49%, however, the response rates for the individual devolved nations were generally higher. Northern Ireland had an 80% response rate, followed by 67% for Wales, 54% for Scotland and 47% for England.

The following findings emerged from the data. As of September 2019:

- the organisations that responded to the survey indicated that 407 medically qualified haematology consultants were in post
- with clinical pressures on haematology consultants increasing, respondents expressed concerns that time spent in the laboratory is being reduced
- respondents indicated that there were difficulties recruiting to consultant posts, both medical and clinical scientists, as well as specialty and associate specialist (SAS) grade posts.

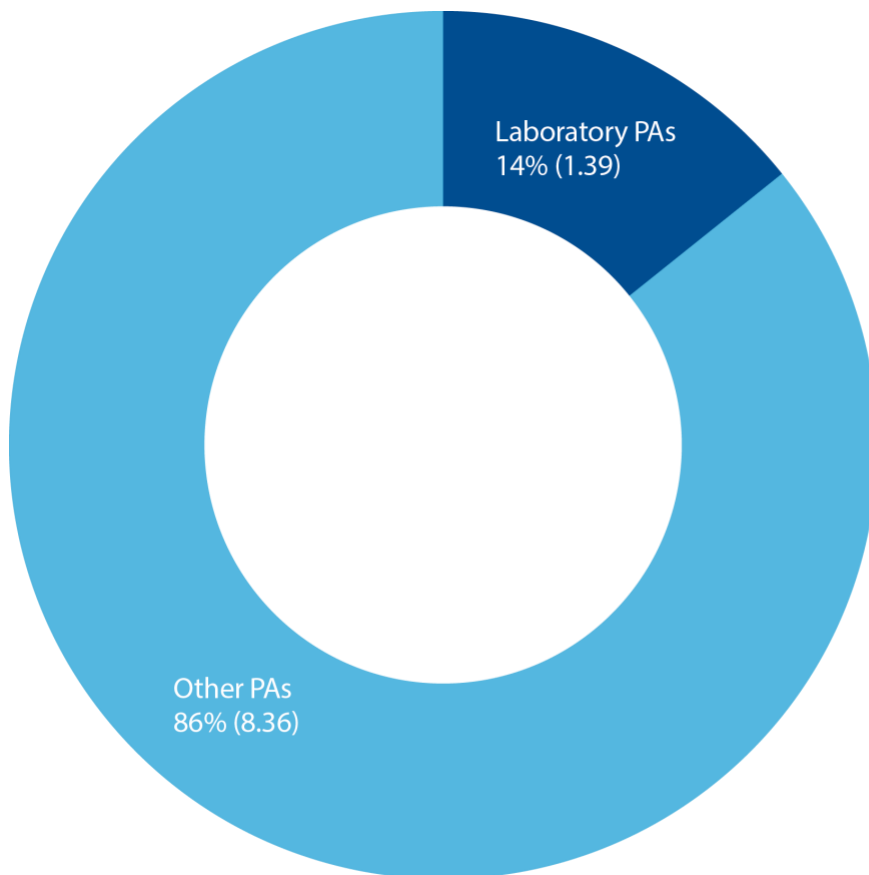
Workforce

The survey results from the responding 49% of departments show a headcount of 407 medically qualified haematology consultants. On a whole-time equivalent (WTE) basis, this is 389.5 consultants. However, the most recent consultant census data from the Royal College of Physicians in 2018–2019 estimates that there are 1,066 consultants with a WTE of 974.2

Our survey found that the average number of programmed activities (PAs) that haematology consultants devote to laboratory work was 1.39 per week, with the average number of overall PAs being 9.75 (see Figure 1). A PA is half a day of activity, which could include direct patient care, time in the laboratory, continuing professional development, teaching or external work, such as with a medical royal college or the General Medical Council.



Figure 1: Average programmed activities per week among haematology consultants in the UK.



It is not clear from this survey whether these PAs are divided through the working week or fixed sessions of consolidated time in the consultant's job plan. This may well vary between hospitals or even within hospitals between different consultants.

While fewer in number, the survey also collected data about SAS doctors, who make a real contribution to the delivery of haematology services. The term 'SAS doctor' includes staff grade, associate specialist and specialty doctors with at least four years of postgraduate training, two of which are in a relevant specialty.³ Worryingly, while the result of the survey showed that there are 60 SAS grade doctors in post in the UK, there are 18 unfilled SAS grade posts, representing a 23% vacancy rate.

There were insufficient data collected about haematology clinical scientists to make any clear conclusions, but those who did respond to the survey expressed concerns about problems with recruitment and retention in their professions. Clinical scientists have an important clinical interpretative role and perform specialist investigations that enable the diagnosis and management of disease processes,⁴ while biomedical scientists are technologists seeking to find new ways to cure or treat disease by developing advanced diagnostic tools or new therapeutic strategies.⁵



Workload

Comments were received from several trusts/health boards that indicated that clinical pressures on haematology consultants were increasing and their increased clinical workload was often carried out at the expense of time spent in the laboratory.

For example, one respondent said: '[One of the] main problem[s] in haematology is the exponential rise of the haematological cancer workload with an explosion of new drugs having a huge beneficial impact on patient survival – with this comes larger and larger clinics, ward rounds, calls for advice, etc., such that medically trained consultant haematologists are now increasingly absent from labs as they are dealing with cancer. Increasingly, I think consultant clinical scientists will be required to fill the gap this leaves behind at the interface between the lab and clinical services at the diagnostic end of haematology patient journeys in the future.'

Although we did not request data on a change in laboratory workload through our survey, anecdotal data indicate an increase in the number of tests required. Although increases will differ across trusts/health boards, in just one department there was:

- around a 25% increase in the last decade in requests for full blood counts to screen patients who are unwell for a variety of disorders, such as anaemia and infection
- a 20–30% increase in haematinics for the investigation of anaemia
- a 20% increase in bone marrow aspirates and trephine biopsies, for the investigation of possible bone marrow disorders
- a doubling of immunophenotyping requests and a significant increase in requests for molecular diagnostic tests for the investigation of suspected haematological and non-haematological malignancy.

Workforce vacancies

Of those who responded, 30 hospitals reported that they had a total of 47 medical consultant vacancies. These vacancies are spread across the UK, although there is a notably higher number in the East Midlands and Yorkshire.

Many comments were recorded about the difficulty some hospitals have experienced in recruitment to unfilled medical and scientific posts. In one example, a hospital reported that the poor pay structure and lack of merit award payments had resulted in difficulty in consultant recruitment.

In another hospital, we were told: 'I am very worried for the future. One third of our consultant staff have retired and returned and recruitment [is] proving very difficult. Clinical work [is] increasingly taking over and laboratory work [is] being squeezed in when possible.'

For SAS doctors, 60 are employed in the 76 responding trusts, with an additional 18 unfilled posts. One hospital said: 'We have wanted to appoint a specialty doctor to complement the work of the department but repeated adverts have not yielded any applicants to interview. We plan to advertise to replace a colleague who has resigned his substantive consultant post.'



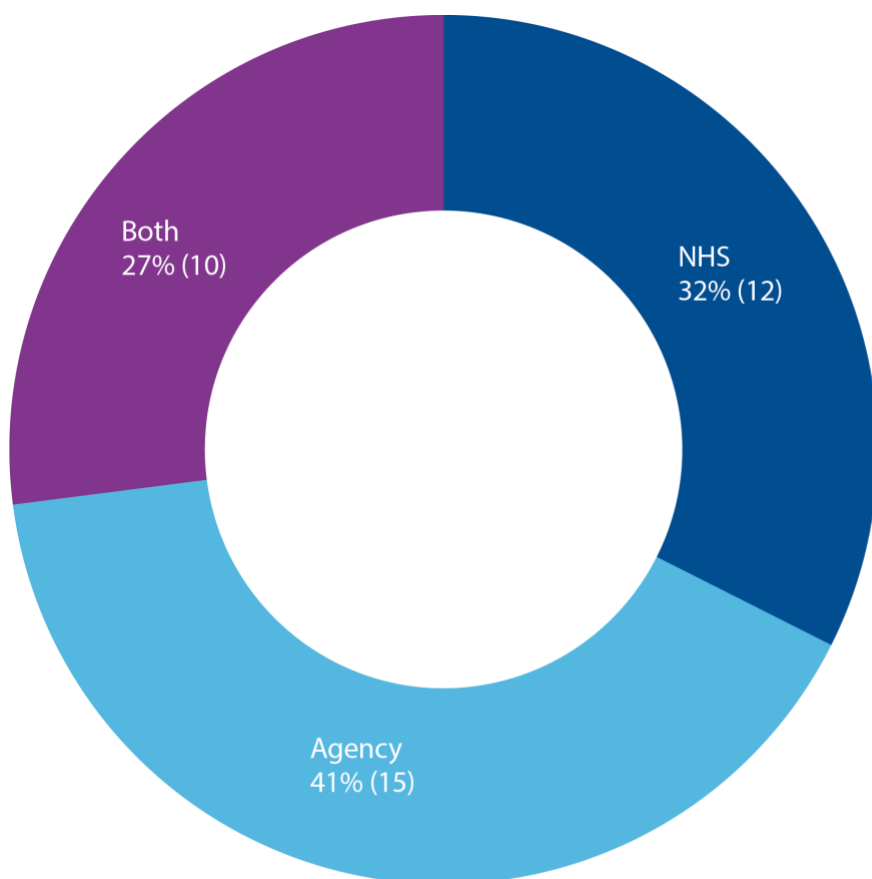
Locum appointments

Of the departments that responded, 37 mentioned that they had locum posts. Of these, 12 had NHS locums, 15 had agency locums and 10 had both NHS and agency locums. A lack of applicants for permanent substantive consultant posts was the main reason given for these locum appointments. Other reasons included pending appointments, excess clinical demand, maternity leave and the reconfiguration of services.

Respondents commented that the cost was between £5,000 and £6,000 per month for an NHS locum and between £11,000 and £32,000 per month for an agency locum.

One respondent, in northern England, said: '[We] cannot get anyone to apply for the substantive [consultant] posts which have both now been vacant for nearly two years.'

Figure 2: Sources of locum appointments among haematology departments in the UK.



Retirement

Departments were asked about the plans for retirement of their consultant workforce.

Of the existing medical consultants, 17% (69) are expected to retire in the next five years and 37% (151) within ten years. Even more worryingly, the most recent consultant census data from the Royal College of Physicians estimates that 47% of consultants are expected to reach mean retirement age (62.3) over the next decade and it suggests that between 380 and 593 consultants are expected to retire by 2029.²



Many departments reported that they already have retired consultants who have returned to work (retire and return). However, many of these 'retire and returns' will only be allowed by their employer to work for two to three years.

There were insufficient data on clinical scientists to make any reliable observations.

Predicted workforce requirements

Overall, responding departments predicted that in the next two years they would be advertising for 84 medical consultants, 31 clinical scientists and 26 SAS doctors across the UK. It is likely that this is an underestimate since the data only represent 49% of the employing organisations in the UK.

The most recent Higher Specialist Trainee (HST) census data from the Royal College of Physicians in 2018–2019 show that there are 570 haematology trainees in the UK, with 23.2% (133 trainees) expected to obtain a Certificate of Completion of Training (CCT) in 2020 and a further 17.7% (101 trainees) in 2021.² However, when the data are broken down by country, there are real concerns about the throughput of trainees and whether there are enough to maintain, let alone grow, the service given the retirement data and current and predicted vacancies from our survey.

Table 1: Current and predicted vacancies, retirements, trainees and CCTs in haematology, 2020–2021.

Country (response rate)	Current consultant vacancies (RCPATH survey)	Predicted vacancies 2020–2021 (RCPATH survey)	Predicted number of retirements based on mean age (RCP census ₂)	Total number of trainees (RCP census ₂)	Predicted number of CCTs in 2020–2021 (RCP census ₂)
England (47%)	39	71	54	490	192
Wales (67%)	5	5	2	17	12
Scotland (54%)	1	5	1	49	22
Northern Ireland (80%)	2	3	2	14	8
Total	47	84	59	570	234

Assuming that the remaining departments in England that did not respond to the survey would report similar numbers of current and predicted vacancies, it is estimated that a minimum of 288 trainees will be needed to fill all current and predicted vacancies and retirements in England only over the next two years.

As Table 1 shows, the predicted number of haematology trainees expected to obtain a CCT in the whole of the UK is only 234. This highlights that there are real concerns for nearly all of the devolved nations in being able to adequately recruit enough consultant haematologists in the next two years. It is likely that these figures do not fully account for the necessary growth in the workforce required to meet growing workload demands.



What is needed?

Improved recruitment into training and early exposure to pathology

Our survey briefly addressed trainee numbers and recruitment. There is already a government initiative to increase medical student numbers – this is important and the Royal College of Pathologists supports further necessary expansion. We are also seeking to influence medical students through increased exposure to pathology in the undergraduate curriculum. We have published a pathology undergraduate curriculum,⁶ promoted through the Medical Schools Council, and are supporting a range of activities to promote haematology and, more broadly, pathology as a career among undergraduates as they become foundation trainees.

Delivery of a laboratory and clinically based curriculum

Recent data show that there is generally a very high fill rate for haematology trainee positions.⁷ However, the large number of consultant vacancies suggests there needs to be an increase in the number of training places to plan for an expanding consultant workforce to support the growing workload.

Changes to postgraduate medical training have seen the Joint Royal Colleges of Physicians Training Board (JRCPTB) introduce a new stage 1 internal medicine curriculum prior to entry to specialist haematology training.⁸ Many medical specialties are reducing their time in specialty training to spend more time training to support the general admission of patients to hospital for investigation and treatment. Such a change to the haematology curriculum would not be supported by the College owing to the risk of sacrificing training in the laboratory for general and haematological clinical training and thereby losing the crucial dual nature of being a medically qualified haematology consultant. However, haematology trainees will continue to undertake five years of haematology training for the time being and the College is supportive of the new haematology curriculum.

Supporting the consultant workforce

Owing to the dual nature of the role of medically qualified haematology consultants, job plans should be written to ensure that there is sufficient time set aside specifically for laboratory duties, among the available consultants, to fulfil the diagnostic and educational requirements, and regulatory and developmental demands, of the specialty.

Pathology networks and the requirements for specialist integrated haematology malignancy diagnostic services (SIHMDS) have encouraged centralisation of diagnostic services. In turn, this 'pulls' consultant staff towards larger teaching hospitals and may discourage trainees from applying for posts at some district general hospitals. This pull to the centre is also true for the clinical care of patients with many acute and chronic haematological disorders. Shared contracts between teaching and district general hospitals is one potential option to assist in resolving this problem.

Thought should also be given to more novel solutions to staffing haematology laboratory services in district general hospitals, such as employing and developing more clinical scientists – an option mentioned by some respondents to this survey. One respondent said: 'We would like to have more laboratory clinical scientists but have found it difficult to recruit and are developing more in-house



posts.' The College publishes curricula for clinical scientists in Higher Specialist Scientist Training (HSST), which include the requirement for clinical scientists to become Fellows through examination, thus enabling them to progress into consultant clinical scientist roles.

The College will continue to recommend and encourage trusts and employers to appoint consultant clinical scientists to support haematology services and patient care. Furthermore, we will work to ensure availability and continuity of funding for HSST, particularly across some of the devolved nations.

Encouraging retired colleagues to return

Of the 407 haematology consultants in post, 19 were noted as having 'retired and returned'. Like many medical careers, haematology is a stressful occupation. Towards the end of a career, many haematologists would like to reduce their workload but this may be difficult to do without affecting their colleagues' workloads. There are other reasons for consultants retiring early, with concern about tax on pensions being one such issue. 'Retire and return' is one solution to early retirement, but such doctors are often employed on a locum basis without job security and it is unusual for such posts to continue for longer than two to three years. More consideration at local and national level is needed to find solutions that would help increase the number of haematologists continuing to perform laboratory work.

IT systems that are fit for purpose

Pathologists need better IT for day-to-day work, including modern, functional laboratory information management systems (LIMS), voice recognition support and remote working software for multidisciplinary teams. A third of LIMS are more than 30 years old.⁹ These are vital in pathology services to effectively manage requests for diagnostic tests, samples and reports to guide treatment and plan further investigations.



Our commitments: how will the College help?

To support the specialty, the College is making the following commitments.

We will:

- support and promote the need for expansion of medical and clinical scientist trainee and consultant numbers in haematology to Health Education England, the government and the devolved nations
- work with the JRCPTB to ensure an appropriate balance of clinical and laboratory training in the haematology curriculum
- support SAS doctors through a new College strategy¹⁰
- promote the recruitment and development of clinical scientists to assist in running laboratory haematology services
- support haematology consultants considering retire and return options
- continue to press for the implementation of a long-term UK-wide solution to the NHS pension tax issue for the benefit of patients together with the Academy of Medical Royal Colleges
- continue to call for investment in pathology IT and infrastructure
- continue to collaborate with relevant organisations to promote haematology.



References

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- 2 Focus on physicians: 2018–19 census (UK consultants and higher specialty trainees): <https://www.rcplondon.ac.uk/projects/outputs/focus-physicians-2018-19-census-uk-consultants-and-higher-specialty-trainees>
- 3 Who are SAS doctors? <https://www.healthcareers.nhs.uk/explore-roles/doctors/career-opportunities-doctors/sas-doctors>
- 4 Who are clinical scientists? <https://www.ahcs.ac.uk/professional-bodies-council/clinical-scientist-professional-bodies/>
- 5 Who are biomedical scientists? <https://www.ibms.org/about/about-ibms/>
- 6 Pathology undergraduate curriculum: <https://www.rcpath.org/discover-pathology/undergraduates-and-foundation-doctors/pathology-undergraduate-curriculum.html>
- 7 NHS Physician ST3 Recruitment – Application numbers, post numbers, competition ratios: <https://www.st3recruitment.org.uk/specialties/haematology>
- 8 Joint Royal Colleges of Physicians Training Board internal medicine curriculum: <https://www.jrcptb.org.uk/internal-medicine>
- 9 LIMS: www.rcpath.org/discover-pathology/public-affairs/it-and-laboratory-information-management-systems-lims.html
- 10 SAS strategy: <https://www.rcpath.org/sas-doctors-strategy/>



Pathology: vital to patient care

Pathology is the study of disease.

Pathologists work with frontline hospital clinicians, primary care practitioners and patients to prevent, identify, treat and monitor diseases.

Pathologists are involved in the diagnosis of disorders affecting every organ of the body, from before birth to after death.

The work of pathologists and clinical scientists is vital for effective healthcare. The majority of tests requested by doctors will be performed and interpreted by a clinical scientist or medically qualified pathologist.

Pathologists carry out millions of tests every day and are involved in almost all patient care pathways within the NHS.

About the Royal College of Pathologists

The College works with pathologists at every stage of their career. We set curricula, organise training and run exams, publish clinical guidelines and best practice recommendations, and provide continuing professional development.

We engage a wide range of stakeholders to improve awareness and understanding of pathology and the vital role it plays in everybody's healthcare. Working with members, we run programmes to inspire the next generation to study science and join the profession.

The Royal College of Pathologists

6 Alie Street

London E1 8QT

T: 020 7451 6700

E: info@rcpath.org

Twitter: @rcpath

www.rcpath.org

Registered Charity in England and Wales: 261035

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