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Association for Respiratory Technology & Physiology

INSPIRE

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INSIDE THIS ISSUE:

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First word

Hello again and apologies for the delay in producing this issue of *INSPIRE*. I would like to thank all involved for 'pulling out all the stops' to produce this issue at short notice. This includes those who submitted articles and of course the Editorial team for their proofreading skills and advice. As usual, if you have any feedback on this issue, please contact the Editor at Inspire@artp.org.uk.

We have the regular columns; changes are afoot at '**On the Blower**', there is news of a CPET competency framework in '**A Word from the Chair**', an excellent '**Fresh Air**', which in this issue, presents the results of a Survey of UK Hospital Trust Research & Development Departments. '**Top Forum**' provides a brief summary of some of the posts that garnered the most attention on the ARTP forum since the previous issue, a real variety of topics. There is also the return of two old favourites in '**From the Museum**' (who remembers the Haldane apparatus?) and the '**No prizes**' cryptic crossword, challenge the others in your team! We also have two original articles which run nicely together, concerning **NHS England Diagnostics** and the **NHS England Physiological Science Transformation Programme, NPSTP**.

It will soon be conference time and I look forward to meeting some of you there, poster ready to go. ARTP are looking for a new Editor of *INSPIRE*, so what would this involve? As mentioned above, there are regular features in Inspire, but perhaps you have ideas for others, or there is a subject you would be keen to read about. The ARTP team might be able to find a suitable author, or you might know one yourself, to get that article written. Once the articles come in, the Editorial team assist with proofreading and suggestions for improvement before the final version is sent for formatting and publication. If you have an interest in this then I would be happy to discuss further at the conference, or contact the ARTP administration team for further information.

Aidan Laverty

A Word from the Chair

Julie Lloyd, *ARTP Honorary Chair*

Hello and a warm welcome to a slightly delayed *INSPIRE*. I would firstly like to extend my huge thanks to Aidan Laverty, 'former' *INSPIRE* Editor for kindly stepping in to the breach to bring this copy together. It just goes to show that you never quite escape from ARTP no matter how hard you try!

It's that slightly odd time of year when the fizz and excitement of Christmas is behind us, 'dry January' is done and dusted and the promise of the warmer weather of Spring seems a little bit too far away. Many of us will also have made New Year resolutions that have fallen by the wayside, but take heart that the ARTP Annual Conference is only a few short weeks away!

You may have missed the Early Bird deadline for registration at the Conference, but please have a look in your budgets to see if there is anything 'going spare' as there is an excellent scientific program planned, along with the now legendary social program. We have 'Early Careers Sessions' covering Respiratory Muscle Assessment and IRAS/Ethics Applications, with Masterclass sessions on the interpretation of lung function and blood gas results and a session on Non-Invasive Ventilation for Beginners. There are the very popular paediatric and sleep tracks along with sessions on CPET and rare diseases along with what looks to be a riveting Pro and Con Debate – Polygraphy: should we follow the AASM guidelines? We are also extremely fortunate to have our own President, Professor Will Man, Professor Mary Morrell and Professor Havi Carel attending as keynote speakers. Throughout the Conference there will be opportunities to see the high quality research, service review and audit undertaken by ARTP members, with directed poster viewing and a dedicated session for the Research Poster Oral presentations. This year is also the first year we have awarded the ARTP Rising Star Award in memory of our colleague Peter Moxon. Nominations closed on 17th February and I look forward to seeing the respiratory and sleep science stars of the future at Conference.

As ARTP Chair I am mindful that I and my committee colleagues are here to serve you, our ARTP members. We continue to try and deliver projects that provide real benefit to our membership and our next major project is the development of a competency framework and certification process for cardiopulmonary exercise testing. This work has been undertaken by the ARTP CPET working group, which consists of CPET experts who have developed this with input from HEI professionals and is due to launch this year! Thank you to the entire CPET working group for the huge amounts of time and effort they have put in to developing this program. This will add to the growing suite of ARTP Professional qualifications that ensure our patients receive the highest quality diagnostic assessments.

I will bring this 'Word from the Chair' to a close and I look forward to seeing many of you at the ARTP Conference at the Hilton Brighton Metropole. As always, I look forward to continuing to work with you all as your Chair and hearing your thoughts for the future direction of ARTP.

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Supporting Regional Network meetings

We are keen to support the ARTP Regional Network meetings, which offer a great opportunity to discuss regional and national issues, share practices and keep abreast of the latest innovations. Contact Charlotte at **charlotte.hyseni@vitalograph.uk** to discuss how we can help.

Enquiries and Updates

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ON THE BLOWER

Matthew Rutter
Brendan Cooper
Ian Cliff

In this edition of 'ON THE BLOWER' we have an update from the Manufacturer Liaison Committee, as well as new product updates and services from Vitalograph. With the conference being in March, the next edition of 'ON THE BLOWER' will focus on news from the conference.

As has been expressed elsewhere, we are deeply saddened that we have lost Peter Moxon and will sorely miss his involvement with ARTP and the Standards and Manufacturer Liaison Committee. We hope to continue to emulate the fine work that he did for ARTP and the membership. As a result, the MLC will undergo a few changes to personnel. I will be stepping down as chair from the committee, while I undertake other roles for ARTP. Prof. Brendan Cooper will step in as interim Chair, while we find other candidates to take on the mantles of Chair and Vice-Chair. We also have the following new committee members; Jo Purvis, Jessica Swann and Dr Karl Sylvester. If you have any interest in being involved or taking on the role, please contact manufacturersliaison@artp.org.uk. The MLC role is interesting and informative and we would like to see new faces from a range of backgrounds and across the 4 devolved healthcare systems come forward. You do not have to be a technical expert, just have an understanding of clinical lung function testing and interacting with equipment manufacturers.

There are a few areas that the group are currently working on. We have had ongoing discussions about increasing costs to services, there have been a build up of factors such as the impact of COVID-19, increasing delivery costs, availability of raw materials and the current financial climate among other things. We are working to produce a manufacturer's view as to why we are seeing these changes.

Speaking of climate, we have had conversations on the environmental impact of plastic waste and if there are sustainable alternatives. However, single use plastics and sterile conditions are a difficult combination to remedy. Manufacturers are thinking of alternative ways to offset those issues, suggesting that where possible remote visits for IT issues could reduce CO2 travel costs by engineers making fewer journeys. The MLC are investigating the development of a sustainability charter, which if adopted, would set an example to our organisation and also for the manufacturers who support it.

The role of Artificial Intelligence is becoming increasingly used in diagnostic and therapeutic situations. While A.I. is still an emerging technology in respiratory and sleep, we are trying to understand the role it will play. We are looking to create a cross working group with ARTP and other organisations to develop a statement on where A.I. could be most beneficial.

We have been working with members while investigating a number of issues that have come up on the ARTP Watchdog. There have been service issues for KoKo customers and we are trying to engage with their senior management to find some solutions to these. We

have successfully performed a similar liaison role with other lung function companies in the past, with all sides benefitting from the experience and of course, ultimately it is our patients who benefit from being able to obtain quality lung function testing,

We have also been engaging (together with ARTP SAC) with the two largest CPAP companies in the UK, ResMed and Philips, to hold both companies to account on the provision and support of CPAP services to ARTP members. As many of you are aware, the supply of global CPAP devices has been severely disrupted for a variety of reasons including: the Philips' recall, the global "chip" shortage, ineffective distribution networks and the knock-on effects of these. Matters are improving, but we're always happy to hear about any problems (or even excellent service) you may be experiencing.

What happens in NHSE Diagnostics?

Emma Ince, *SE Diagnostics transformation Workforce Lead NHS England and NHS Improvement - South East*

As part of my Higher Specialist Scientist Training (HSST) programme, I wanted to stretch myself and learn about other managerial roles, not only those in clinical areas. I was fortunate to be offered a secondment within NHS England (NHSE) South East as their Diagnostic Transformation Workforce manager.

Within the NHS there is a group designated for diagnostic services; including regional monthly meetings and performance meetings. This role looks at all diagnostic services provided by the NHS. Many of these fall under healthcare science, but diagnostic radiography and endoscopy are also included.

This role has opened my eyes to how little senior managers understand about the need for diagnostic staff. A week doesn't pass without my explaining to someone that, while we can support the ambulance crews, GPs, nurses and doctors, there will soon be a bottle neck if we do not also look at the diagnostic services! Indeed, diagnostics are often 'forgotten' in many of the initiatives.

It has been very interesting to begin to understand the differences in some of the other diagnostic services. For example, I would not have imagined that the mammography services, part of Radiography, have a female-only workforce. I remain in shock that such an important service is recruiting from only half the population!

It is clear that physiology isn't the only under resourced service, although it can be frustrating to see how resource allocation differs across the physiology services, even if the reasons seem to make sense. For example, some of our services will be on the Diagnostics Waiting Times and Activity (DM01). If you are fortunate enough to have a sleep service, then your activity and waiting lists are monitored. If your service is respiratory only, then there is no real monitoring of your waiting list and activity.

If we look at other services, such as Echocardiography then, because echo performance is often flagged on the DM01, due to high waiting lists, then there are Health Education England (HEE) initiatives and regional focuses on Echo. Possibly this might change when the anticipated new DM01 is released later this year.

I have focused on two main areas during my secondment. One is utilising digital staff passports (DSP). These are to enable substantive staff to move from one NHS organisation to another, without the need for honorary contracts. The DSP is linked to our electronic staff records, so allows the transfer of information quickly. I have had one issued and it took all of 15 minutes from start to finish.

The other area has been to calculate the current workforce in the South East, then extrapolate to that which will be required in 5 years, based on Sir Mike Richards' review (https://www.england.nhs.uk/publication/diagnostics-recovery-and-renewal-report-of-the-independent-review-of-diagnostic-services-for-nhs-england/). This has been rather tricky, as the electronic staff records (ESR) are poor, with many staff recorded as being allocated to an incorrect workforce area. This workforce planning will be used by the regional team to begin to highlight just how lacking in numbers the diagnostic workforce is and how much investment is required.

There are so many areas I could write about here. The main 'take home message' for me has been that all diagnostic services are short staffed, but there are groups who are working to highlight the issues and push for better recognition of our services.

NHS England Physiological Science Transformation Programme

Amy Taylor-Gonzalez, *National Physiological Science Transformation Programme Implementation Lead*

It is now 3 years since the World Health Organisation (WHO) declared the circulation of SARS-CoV2, the virus that causes COVID-19, as pandemic. To date, nearly 300,000 people have been admitted into NHS England hospitals positive with COVID-19, with many more subsequently treated whilst in hospital. Huge operational disruption to services, due to necessary infection control procedures, staff absences and ongoing uncertainties in relation to the COVID-19 pandemic, plus demand for hospital treatment has created backlogs for NHS services that requires incredibly complex strategies to overcome.

The NHS Elective Recovery Plan[1] was established to deal with the long waits that subsequently arose for elective care. The plan focusses on four areas of delivery:

1. Increasing capacity
2. Prioritising diagnosis and treatment
3. Transforming the way elective care is provided
4. Providing patients with better information and support

Key to supporting and delivering the elective recovery plan are diagnostic services that form 85% of all clinical pathways and is recognised as a priority in the NHS Long Term Plan.[2] Professor Sir Mike Richards Review of NHS diagnostic services[3] (also known as the Richards' Review), published in October 2020, identified five key modalities of diagnostics that require transformation namely pathology, imaging, endoscopy, genomics and physiological science services. To meet the recommendations set out in the Richards' Review and deliver the Elective Recovery Plan, the National Diagnostics Transformation Programme (Figure 1)[4] has been established with the National Physiological Science Transformation Programme[5] (NPSTP) as one of the key deliverable projects. Nathan Hall, the Head of NPSTP, comes with a comprehensive background in quality improvement, service commissioning and change management. Martin Allen is the programme's National Speciality Advisor, the current GIRFT Lead and National Clinical Director for Respiratory Medicine. Amy Taylor-Gonzalez, the Programme's Implementation Lead, has worked as a

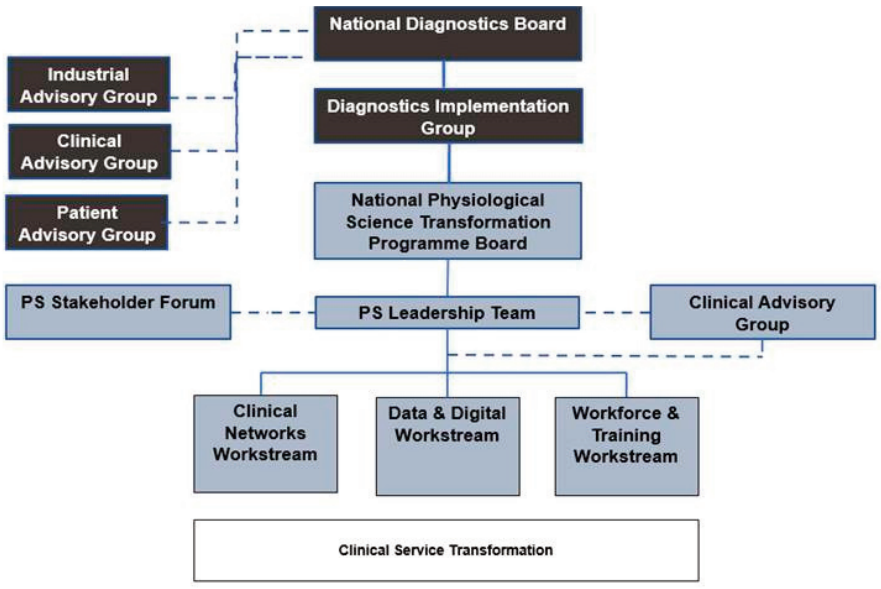


Figure 1. National Diagnostic Transformation Programme Governance

Respiratory and Sleep Scientist in tertiary and secondary providers for 15 years.

The National Physiological Science Transformation Programme (NPSTP) works across 8 specialisms of Physiological Science namely Cardiac Science, Respiratory and Sleep Science, Neurophysiology, Gastrointestinal Physiology, Urodynamics, Audiology, Vascular and Ophthalmic and Vision Science. The Programme has four key areas of focus to deliver the objectives set out in the Richards' Review to transform services across the 8 disciplines:

1. Data and Digital
2. Develop Physiological Science Networks
3. Transformation of the Workforce
4. Supporting Community and Diagnostic Centres

Key Achievements To-Date

Data and Digital

Over 130 trusts completed the first of our annual national data collections, for cardiac and respiratory science services. This was a snap-shot survey providing the benchmark data, upon which the Programme plans to build. This will inform regions and systems of where the priorities for service planning and improvements should lie.

If we look at Cardiopulmonary Exercise Testing (CPET), Figure 2, there appears to be significant inequity in provision of this service across regions. What does this mean when we consider planning post operative care, or evaluating complex breathlessness for our patients in these regions? The data will provide insights at a regional, system and provider level of where we need to focus our improvement efforts to improve access to this service.

In which region in England do you think people are getting a better night's sleep? Well, we know that in the South-East there is more sleep equipment per 100,000 population (Figure 3). Of course, we need to consider what the access is like to sleep medicine services, the workforce that delivers this and population demographics. However, the data suggests there is significant regional variability in sleep medicine facilities and again this can be broken down to a system and provider level. The full analytical tool from this analysis will be made available by March 2023.

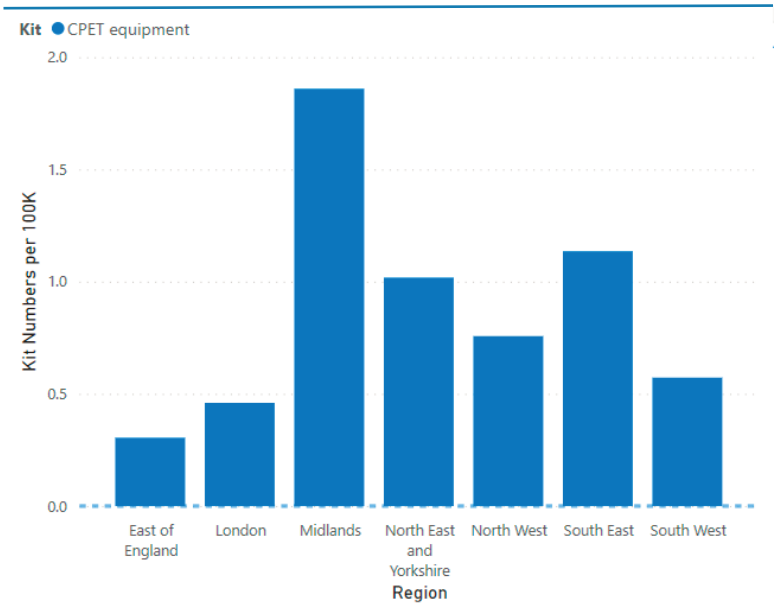


Figure 2. CPET equipment per 100K population by region

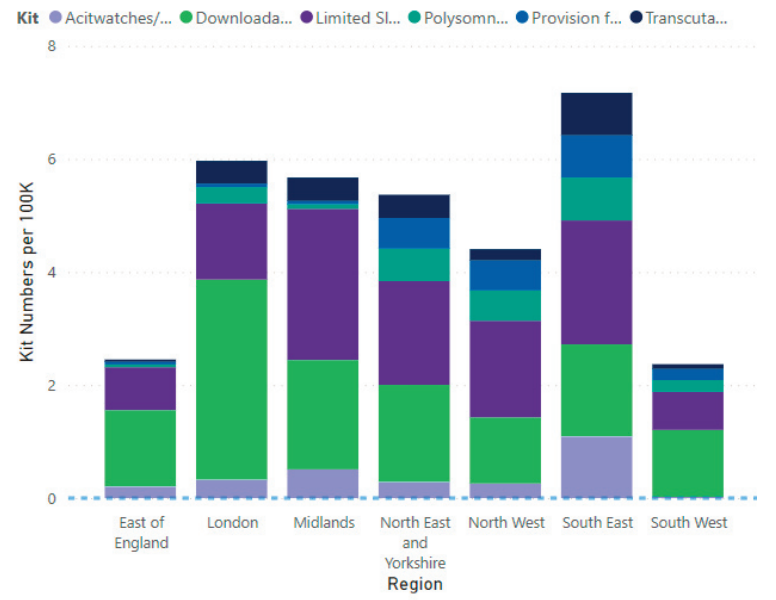


Figure 3. Sleep equipment per 100K population by region

Physiological Science Networks

In September 2022, we hosted a webinar, supported by Professor Sir Mike Richards and the Chief Scientific Officer Professor Dame Sue Hill, to initially discuss the concept of Physiological Science Networks. We also heard from Kim Robertson, Head of Imaging Transformation at NHS England, about how Imaging networks have provided patient- and population-focussed care across traditional organisational boundaries. The vision for Physiological Science Networks is rightly ambitious and we plan to release our guidance document later this year that sets out the objectives and strategy to delivering these networks. In our webinar we heard on multiple occasions from multiple specialisms that the voice of Physiologists is not being heard, not at a system level or even provider level. Can we deliver better care for patients by cross discipline working? Can we deliver more rapid improvement in our services if we collaborate? Can we train more of the future workforce by working as a collective? We are developing guidance and identifying funding streams to enable the development of such Networks. Please keep a close eye on our NHS Futures Platform[5] if you wish to keep updated.

Transformation of the Workforce

The Programme works closely with the National School of Healthcare Science (NSHCS) to support the transformation of the workforce. Just one of the outputs with NSHCS is the development of Cardio-Respiratory Apprentices. We see this multi-skilled workforce as key to delivering many of the simple investigations within community diagnostic centres (CDCs). The School and Programme have long recognised the need for new education and workforce models to provide a sustainable pipeline of staff with the specific knowledge and skills required for cardiac science and respiratory science services. In 2022/23 we saw over 110 expressions of interest for these apprentices with support grants expected to continue for 2 more years. This is just one initiative that the programme has been working on to support with the transformation of the workforce. An apprenticeship has also been developed for sleep scientists to support this growing field of Respiratory Medicine and to clear the backlogs created by the pandemic. Data suggests that referrals from primary care for sleep services have still not met pre-pandemic levels so there are many more patients out there.

Supporting Community Diagnostic Centres

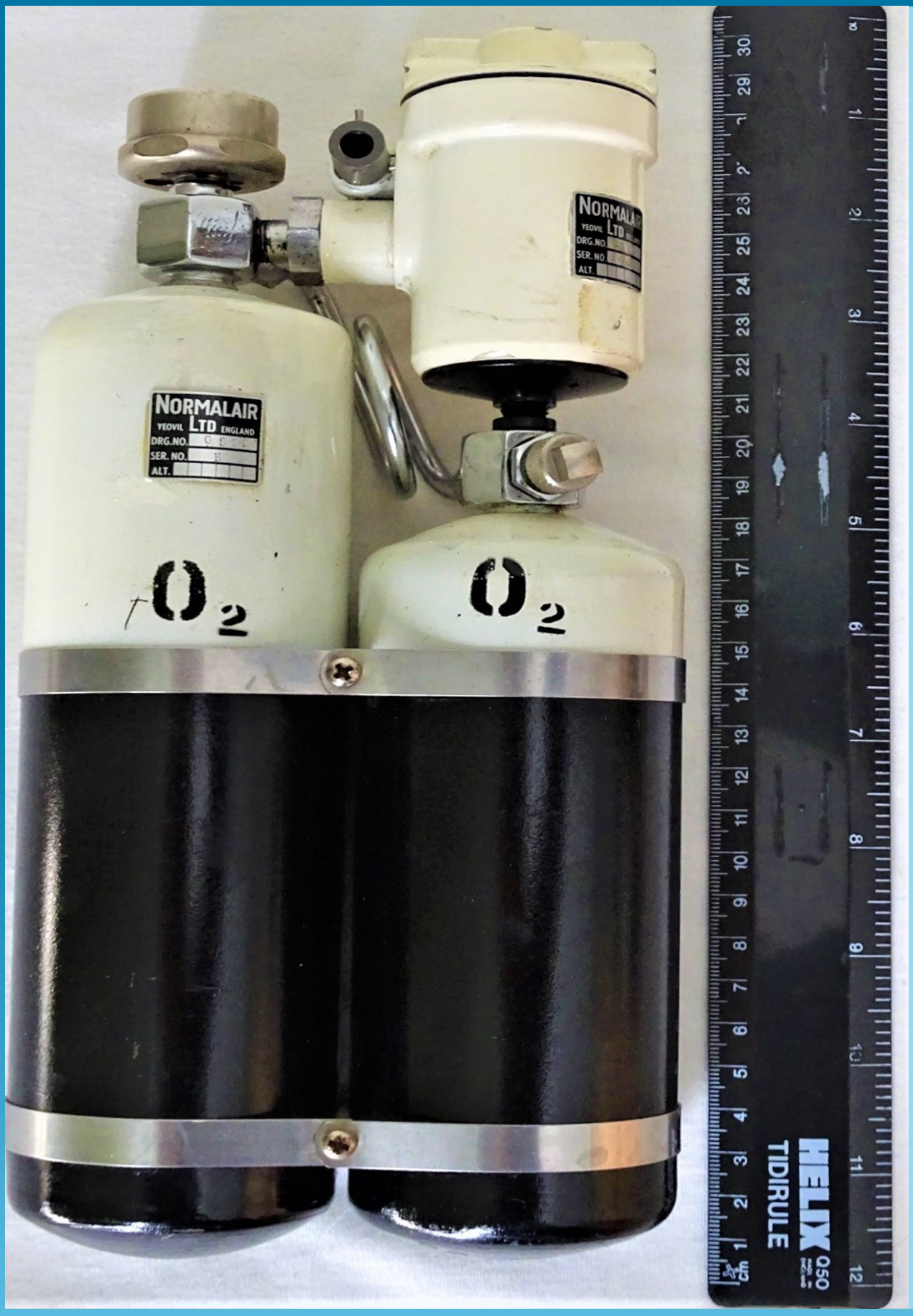
To date we have reviewed and advised on over 85 business cases that plan to deliver Physiological Science services in Community Diagnostic Centres. It is great to be working with the ARTP, who are supporting us with Operational Guidance on how to deliver these services safely and effectively.

If you wish to find out more about the National Physiological Science Transformation programme, please join our NHS Futures page or email england.pmprogramme@nhs.net for a link.

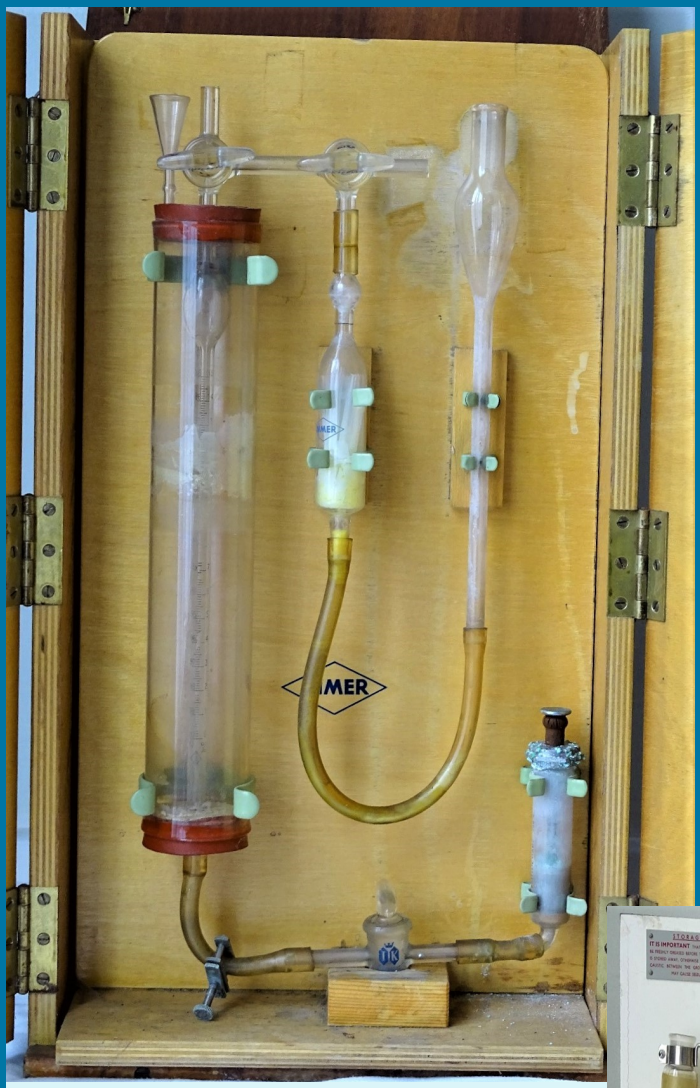
References
1. https://www.england.nhs.uk/coronavirus/delivering-plan-for-tackling-the-covid-19-backlog-of-elective-care/
2. https://www.longtermplan.nhs.uk/
3. https://www.england.nhs.uk/publication/diagnostics-recovery-and-renewal-report-of-the-independent-review-of-diagnostic-services-for-nhs-england/
4. https://future.nhs.uk/NationalDiagnosticTransformation
5. https://future.nhs.uk/PhysiologicalMeasurements

From the museum

Images by Dr. David Chinn



Portable oxygen cylinders, c 1960s



Haldane apparatus, Aimer Products, London, c 1950s

Lloyd-Gallenkamp Gas analyser, Gallenkamp & Co Ltd, c 1950s

FRESH AIR

Edited by **Dr James Stockley** *ARTP Chair of Research and Innovation*

Dear Reader,

Welcome back to 'Fresh Air'. These articles are designed to communicate novel trends in research, innovation and clinical practice from both respiratory and sleep sciences. Our aim is to provoke thought and conversation within the ARTP community that we hope will benefit the future direction of physiological practice.

For this issue, I have published the findings from our recent survey on UK Research & Development departments on behalf of our ARTP Research and Innovation Committee. Thank you once again to all that completed the survey. The idea resulted from the frustrations our department had experienced with R&D over many years. The survey has provided a very informative and useful starting point in our aim to help simplify the R&D approval process within our Trust, with the subsequent (admittedly ambitious) goal of facilitating its standardisation across the UK.

A Survey of UK Hospital Trust Research & Development Departments

Introduction

Research & development (R&D) departments within hospital Trusts are designed to support, drive and embed patient-centred research within healthcare practice. Within this remit, they have a responsibility for sponsoring research, contributing to grant applications, ensuring the safe and ethical involvement of participants, maintaining high quality and efficient research. A primary outcome is to generate income through innovation, which supports further development of research activity but, also, the translation of research findings into improvements in patient care. My own experiences with R&D have not generally been positive. The approval process seems convoluted and protracted, with at least 8 major steps (more for clinical trials) and approval by 4 separate entities (Research Ethics Committee, Respiratory Facilitation Group, Main Research Facilitation Group, and Trust R&D). The most recent study has taken over 12 months to be approved, with progress held up on two occasions when R&D encountered a problem and did not contact our team to discuss and resolve it. Furthermore, there appears to be a lack of communication within the R&D department as we had been asked the same questions by a number of different R&D employees. The study prior to that took too long to approve that we missed the recruitment deadline and were ultimately unable to participate, which does not enhance the reputation of a major teaching hospital.

Having spoken to a number of ARTP colleagues at different Trusts, it became apparent that was not unique with similar problems occurring across the UK. However, anecdotal and experiential evidence is a weak form of scientific evidence and is certainly not real data from which one can draw scientifically valid conclusions. With that in mind, I designed a survey with the help of the Research & Innovation Committee for distribution among the ARTP community to collate the opinions of different researchers from a variety of Trusts across the UK. The R&D survey included 9 questions with a pre-set choice of ordinal answers and an opportunity at the end to add specific comments in an open manner. The survey was approved by

FRESH AIR

the ARTP Board before distribution. It was distributed firstly at the 2022 Annual Conference and later via email to give others who did not attend the conference an opportunity to provide feedback. It was important to appreciate that R&D activity had been severely limited during the COVID-19 pandemic, so researchers were advised to discount this period.

Results

There were 20 surveys completed at the 2022 ARTP conference and a further 10 responses via email, making a total of 30. The first question asked how many studies the researcher had previously submitted for R&D approval to quantify how experienced they were. In hindsight, it would also have been informative to enquire the researcher's role and Band but this was unfortunately not included. 50.0% had submitted between 3 and 5 study proposals, with a further 36.7% having submitted 1 – 2. Only a small proportion had submitted either 6 – 10 proposals (6.7%) or more than 10 (6.7%) (Figure 1). This suggests that the majority of researchers that completed the survey were relatively inexperienced or moderately experienced with the R&D approval process.

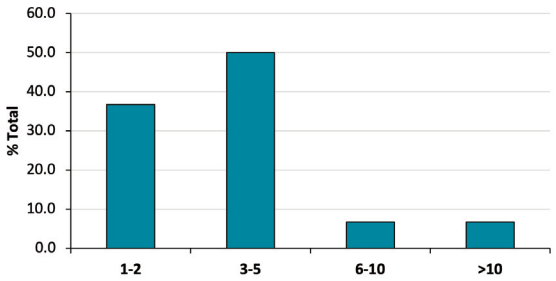


Figure 1. How many studies have you submitted for approval to your Trust's R&D department?

Next, the survey asked how many major steps are involved in the study approval process for the individual's Trust. This includes ethical approval via the Integrated Research Application System (IRAS) and any Trust Research Facilitation Group (respiratory or otherwise). The vast majority stated 3 – 5 steps (73.3%) with only a few stating 1 -2 steps (13.3%), 6 – 10 steps (3.3%), or more than 10 steps (10.0%) (Figure 2). It is possible that some of the responses may have been an estimate, particularly for those completing the survey at the conference who may not have been able to verify their response while away from their Trust.

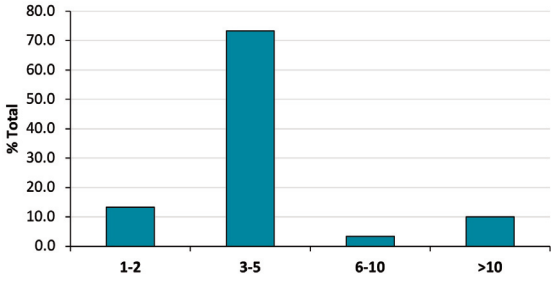


Figure 2. How many major steps are involved in R&D approval in your Trust?

Question 3 was a follow-on question that asked the researcher to grade the simplicity of their Trust's R&D approval process subjectively. Only 3.3% answered "very simple" and 10% answered "fairly simple". The majority answered "reasonable" (53.3%) with a high proportion answering "fairly complex" (23.3%) and 10% answering "very complex". This demonstrates that only a small proportion in total (13.3%) believe their R&D approval process to be relatively simple, with a third in total (33.3%) believing it to be at least fairly complex (Figure 3). It is important to note that perceived complexity may relate, in part, to lack of experience with the R&D approval process, particularly as the majority of researchers who completed the survey had not

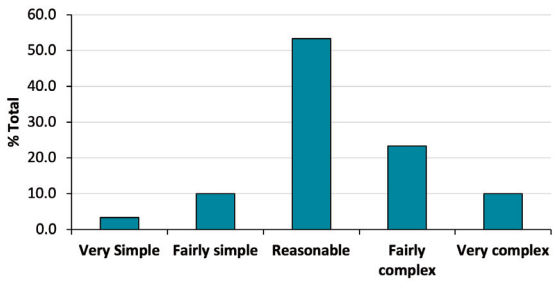


Figure 3. How simple/complex is your Trust's R&D approval process?

FRESH AIR

submitted many studies to R&D and were, therefore, unlikely to be highly experienced.

The efficiency with which R&D departments approve studies was rather mixed. 33.3% of departments approved either within 3 months or between 3 – 6 months. 30% of departments approved within 6 – 12 months and only a small proportion (3.3%) took over 12 months to approve studies (Figure 4). Reasons for the variation could relate to the number of separate steps involved in the process or, as one responder commented, staffing issues within R&D.

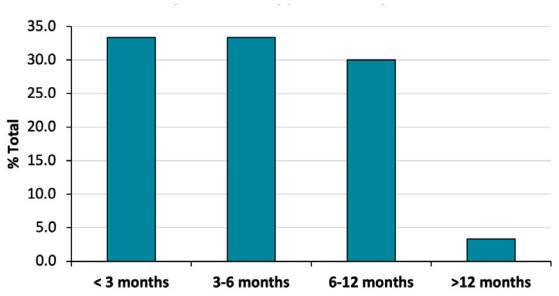


Figure 4. How long on average does it take for your R&D department to approve a study?

The next two questions were designed to determine how efficiently R&D departments respond to enquiries. The first question asked if the researcher had ever contacted their R&D department. 28/30 (93.3%) responded “yes” with only 2 responding no. Of these two, one researcher (3.3% of total) knew how to contact R&D but the other did not (3.3% of total) (Figure 5a). Of the 28 that had contacted R&D, 7.1% stated they were slow to respond, 14.3% stated

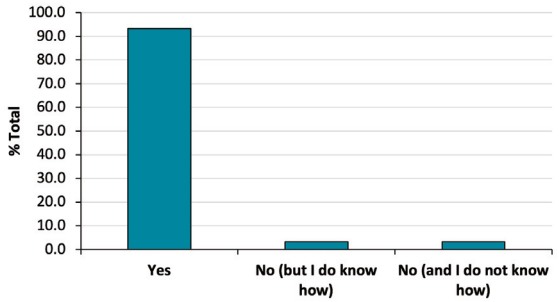


Figure 5a. Have you ever contacted your R&D department?

fairly slow, 21.4% stated the response time was satisfactory, 39.3% stated fairly quick, and 17.9% stated very quick (Figure 5b).

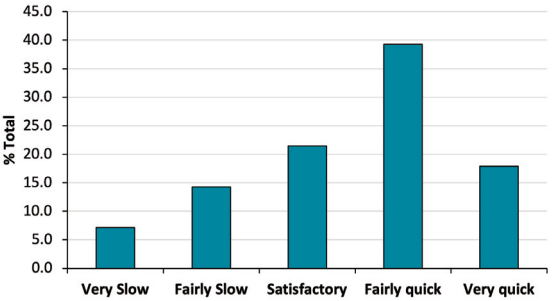


Figure 5b. How quick are they to respond to enquiries?

Researchers were next asked to rate how proactive their R&D department was. For example, whether or not R&D contacted them if they encountered queries when processing the submission. A minor proportion answered “not at all” (3.3%) but more answered “not particularly” (13.3%). The majority answered “satisfactory” (43.3%) and many rated their R&D department as either fairly proactive (13.3%) or very proactive (26.7%), which is encouraging (Figure 6).

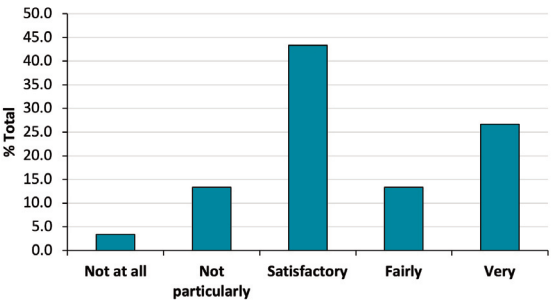


Figure 6. How proactive is your R&D department?

The last major question asked the researcher to grade the overall performance of their R&D department. Responses were mainly positive, with 30.0% answering “good” and 26.7% answering “excellent”. 26.7% also answered “satisfactory” and only small proportions answered “poor” (6.7%) or “very poor” (10.0%) (Figure 7). It is generally encouraging to hear that the majority of R&D departments across the UK

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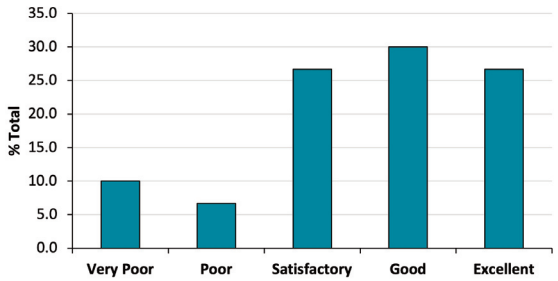

Figure 7. Overall, how would you rate your Trust's R&D department?

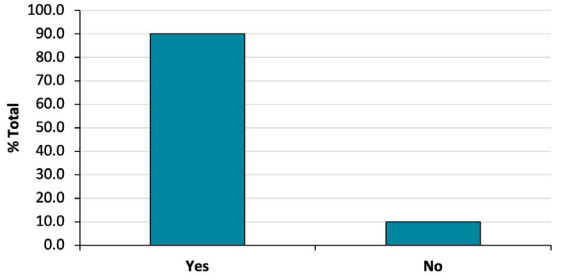

Figure 8. Do you know if your Trust has a Clinical Audit department?

are rated highly or at least satisfactory, although there are clearly some that appear to be under-performing according to the researchers.

As a footnote, we were interested to find out how many researchers were aware of a Clinical Audit department within their Trust. Performing a clinical audit is a useful tool for service management and improvement and usually a far simpler study concept, which may be more appropriate for junior staff, such as those undertaking PTP or apprenticeship final year projects. The approval process for clinical audits is significantly quicker although, admittedly, the project itself may potentially be less impactful than a prospective study. 90% of researchers were aware of a Clinical Audit department within their Trust, with only 10% being unaware (Figure 8).

11 researchers left open comments at the end of the survey. There was an even split of 5 positive and 5 negative comments, with one researcher offering constructive but neutral advice. These comments are shown in Table 1.

Table 1. Researcher comments

Comment	Rating
Very supportive. Proactive in following through.	🙂
Our Trust is very research active. The R&D department has research nurses embedded - these include respiratory nurses. Help is available on preparing protocols, IRAS and other management approvals. We also have a research advisor (very approachable) to provide academic support (including complex stats, research design etc.) to researchers, especially novices undertaking MSc courses.	🙂
Very supportive throughout my first experience of writing and submitting a research protocol	🙂
Overall, very supportive and knowledgeable	🙂
I would say it is very involved but there is great support at all stages and they are quick to respond and advise	🙂
Basically, this should be about teamwork and you need the Doctors' involvement or minimum approval. Tell the Doctors what you are trying to do or prove FIRST with plans before going to R & D then you can do it as team with Doctors names on papers as well even if they don't do the work they have approved it and helped and most importantly of all be interested. Whole point of research is to learn so that better service can be given to patients.	😐
The team seems to love commercial studies, not so keen on anything else.	☹
Needed approval for degree apprenticeship dissertation. Poor experience - getting advised to speak to many different people who all advised different things. Got approved in the end.	☹
Very slow process with lots of hurdles.	☹
Currently understaffed, which slows down approval process. Very labour-intensive process completing the ethics process, even for low-risk studies. Not very proactive in encouraging early career researchers/clinicians to perform research activities.	☹
Limited R&D staff - e.g. one person for contracts (for the entire Trust)	☹

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Summary

The survey has highlighted a wide variation in a number of performance indicators for Research & Development departments across the UK. These areas include the simplicity/complexity of the approval process, study approval time, and the help and support provided by R&D. It was good to see that some Trusts have a very quick approval process with few major steps while others have many more steps and take much longer, suggesting that R&D approval is far from standardised across the UK, although this could be related to study complexity in some cases. It is worth noting, however, that this survey is largely subjective and the differences are perceived and some may simply relate to the researcher's level of experience. For example, a researcher who has only submitted 1 – 2 studies for approval by R&D would not be as familiar with the process as a researcher who had submitted more and may, therefore, perceive the process as more complex.

It is certainly encouraging to see that there are highly effective and supportive R&D departments within some Trusts but this does not appear to be universal across the UK. As one researcher commented, this may in part be due to the lucrative nature of interventional clinical trials, which are likely to be prioritised over smaller studies that may not generate net income. Although this makes sense financially, a lengthy R&D approval process may discourage researchers from undertaking non-profit research. It may also relate to the size of the hospital Trust itself, with larger Trusts being involved in far more research and potentially taking longer to approve studies. While one may expect larger Trusts to have larger R&D departments, the relationship may not necessarily be proportional. Furthermore, staffing issues have been highlighted by one researcher and this issue could be more widespread. Indeed, the inefficiency of study approval and patient recruitment within the UK is something that has previously been highlighted in the literature by Dudley and colleagues who reported on clinical trials and, subsequently, by Petrova and Barclay (2019) who reported on a low-key study in palliative care. Both articles recognise the unnecessary bureaucratic "red tape" associated with research ethics and governance approval. They offer a number of solutions for simplifying the system overall, as well as some useful tips for researchers to expedite the process from their end.

The current survey supports previous findings that the study approval process is slow in some Trusts and some R&D departments are unsupportive. The difficulty lies in knowing how to address this. R&D departments may have generic feedback forms or an online feedback platform. Alternatively, it may be possible to speak to R&D representatives directly to highlight difficulties and work together towards potential solutions. For less experienced researchers, seeking advice and support from colleagues more familiar with the R&D process is worthwhile. Senior clinicians and academics may well have more influence when dealing with problematic R&D departments, particularly if they liaise directly with the head of R&D to voice concerns. However, as suggested in the survey comments, a teamwork approach involving clinicians and research nurses from the outset may help avoid such issues from the outset.

The ARTP Research and Innovation Committee is open to further suggestions on how to optimise the R&D process and strategies to work more effectively with struggling R&D departments. We welcome any additional advice to admin@artp.org.uk (please include "FAO Research Committee" in the subject) so that we can collate and share all helpful information within the ARTP community.

References

Dudley L, Gillman A, Duggan M, et al. What are the main inefficiencies in trial conduct: a survey of UKCRC registered clinical trials units in the UK. Trials 2018; 19: 15.

Petrova M, Barclay S. Research approvals iceberg: how a 'low-key' study in England needed 89 professionals to approve it and how we can do better. BMC Medical Ethics 2019; 20: 7.

TOP FORUM

BEST OF THE ARTP FORUM

Summarising the most popular ARTP Forum topics since the previous *INSPIRE*.

Aidan Laverty & **Mr Ross Hanwell** *Research Physiologist*
Great Ormond Street Hospital for Children NHS Foundation Trust

Title: Rise time

Question: A physiologist expressed concern over a system update concerning measuring a patient's ability to achieve a 10 to 90% rise time within 150ms. In instances whereby this criterion is not achieved, the effort is scored red and graded F. Therefore, discussion over how to best use this guideline were raised and whether this was used elsewhere.

Replies: A senior physiologist was first to reply, indicating that the guidance was based on strong evidence to produce quality diagnostic spirometry. Moreover, the 10 to 90% rise time to PEF within 150ms is the technical guidance outlined in the 2005 published standards. However, the guidance also indicates that the 'best available blow' has clinical usefulness (e.g. pre-op assessment or criteria for starting assessment). Therefore, promoting the need to differentiate between the 'useable' and 'quality' FEV_1 on patient-by-patient basis. This statement was reiterated by other physiologists in subsequent replies.

Title: Six-minute walk test

Question: A query was raised concerning the materials and methods used to indicate distance for six-minute walk tests in other centres.

Replies: This post received several replies, ranging from the use of sticky dots on the ceiling, and lines drawn with permanent marker to heat sealed laminate stickers on the floor. As one physiologist put, "*ARTP members are way more pragmatic at offering multiple solutions to the same question*". I don't think we can agree more.

Title: Predicted values > upper age limit

Question: A Research Physiologist, collating a database for lung volume tests, wanted to know how to calculate for patients aged >80 years, whom the GLI equations do not cover. There were several lengthy responses.

Replies: Extrapolation of existing GLI was not appropriate from a statistical viewpoint because >80 years olds are not 'normal', but 'survivors', according to a top GLI collaborator, who suggested sticking with a fixed >80 value to see how it altered interpretation. One very experienced and longstanding 'ARTP life member' suggested his own investigations showed "*little difference in the mean values from most predicted sets in the [equipment manufacturer] field today*", adding "*the change is more in the distribution and hence the Z-score obtained can be quite different using RSD and LLN settings*".
This received a reply that "*GLI will be publishing a state of the art publication soon we hope. Where we are and how we use reference values still has some way to go*".
Another Physiologist acknowledged the complexity of the issue but stated that clinicians will still require a "*%predicted for patients >80 or 85 years when treatment guidelines are often still based on this*" and one more referenced the recent online ERS discussion, 'What does normal lung function look like?', which indicated a shift "*towards a more patient centred/global clinical*

approach without reliance on "normal vs abnormal" values from a test" might be the way forward. The GLI collaborator replied "*A clinician would be looking at their symptoms, imaging, other tests, response to treatment and may decide to follow a guideline (not an unbreakable law!) to start a new treatment if required. I suspect our guidance will be to treat the patients and not the numbers*". A frequent forum contributor did not see any problem with extrapolating the predicted curves to higher ages, personally suggesting "*a non-linear extrapolation*" but agreed it could be a lot of work, which led to a response stating "*the debate goes on!*". The posts ended with the comment "*I do like the fact that we are modernising and updating the old as change is a good thing*".

Title: RERA or PLMD

Question: The question concerned how accurate standard [respiratory] polygraphy is in detecting periodic limb movement disorder (PLMD) and included a graphical example of what was being asked and how it should be interpreted.

Replies: A Physiologist familiar with PSG referenced an ERS workshop slide and hinted a patient questionnaire may also help with diagnosis and another also referred to the need for a good patient history as key. The initial question was then rephrased as to 'whether you can get a rapid increase in ventilation secondary to a limb movement induced arousal?'.

Title: Energy crisis and PAP

Question: A topical question, based upon the increased energy bills and the prospects of power blackouts we are (were?) all facing. Patients had been calling asking what to do if such events impacted on their use of PAP treatment.

Replies: The responses suggested reassurance (to the patient) that CPAP failure is not a life- threatening event for most OSA patients and a night without CPAP is not a high risk. The respondent acknowledged there were categories of patients who would require a battery back-up and an anti-asphyxia valve/mask as standard and also indicated those on oxygen concentrators would have a back-up cylinder. He suggested this as a good time to review contingency plans as part of risk assessment.

Title: GLI clarification

Question: There was a long thread seeking clarification on 'how best to apply GLI ranges', the requester noting a disparity in how these were being applied.

Replies: The most suitable answer referenced the ERS webinar in October 2022, Panel discussion: 'What does normal lung function look like? What to consider when using Global Lung Function Initiative equations - ERS - European Respiratory Society '(ersnet.org) and suggested that with time we would move away from the current processes in making adjustments for ethnicity. Another resource was shared: https://www.thoracic.org/about/newsroom/press-releases/statement-on-race- based-interpretation-of-lung-function.php?s=03 and the answer finished with the comment "*GLI is an on-going project, [which] may never [end] in our lifetimes*". There was again the remark that "*good clinicians will look at the patient as a whole, [including] the clinical picture*".

Title: In-flight oxygen

Question: The post concerned a Physiologist enquiring 'on behalf of a friend' who was flying to Australia and enquired what the current guidelines and options were.

Replies: There was only one reply, but it was detailed, recommending the 'BTS Statement on air travel for passengers with respiratory disease' (http://dx.doi.org/10.1136/thoraxjnl-2021-218110) and stating "*The main thing is to find out how much oxygen the patient needs to keep their pO_2 >6.6 kPa*

~SpO_2 85% on the aircraft, with the caveat that if supplementary oxygen, at the flow rate needed to maintain that pO_2, causes significant changes to pH (becomes acidotic) and pCO_2 (raises >1kPa), the patient should probably not fly". ELF have a nice index of which airlines provide oxygen on board (https://europeanlung.org/en/information-hub/air-travel/airline-index/), so once it is known how much oxygen the patient will need then contact the most suitable airline well in advance to determine the equipment they allow (i.e. oxygen or oxygen concentrator), and if batteries are required. Ideally the test should be performed using the same equipment the patient will be using during their flight.

Title: Correcting for Hb in TLCO test

Question: A Lead Respiratory Physiologist asked for a 'general idea of how many laboratories do (or do not) measure patient's Hb and adjust TLCO calculation accordingly'.

Replies: The first respondent measured Hb on every patient with a portable 'HemoCue' and this was supported by a post from 'sunny' Perth, Australia, who also wished the Forum a Merry Christmas. This was merely the prelude, however, to a mighty festive 'discussion', featuring the "ghosts of lung function past, present and future", "heavy breathing Barbie" and, of course, Scrooge. A graph was displayed "*5 years after the ATS/ERS Standards [recommended] that Hb correction be done on every TLCO test*" showing that, if not corrected, "*the consequences are quite clear*". The respondent also suggested a short survey about this could be published in *INSPIRE*, "*if anyone wants to take this on*". Other centres used Hb values from any time 8 weeks prior to the TLCO test, or Hemocue if TLCO was outside normal range.

Another centre did not use Hb routinely, unless a record was easily available. There was much discussion about the reason for correcting the reference value rather than the measured one (for Hb) and this might be specific to the testing system (and manufacturer), however someone who was involved with the BTS 2005 guidelines suggested correction of the predicted was much debated then and ended, at the time, with "*...probably more work is needed*".

Something for someone to take on then, "*Yo Ho Ho CO!*".

Title: [Do we need a] prescription for testing gases?!

Question: 2023 started with this question, which produced a heated debate. The Pharmacy at one Hospital was asking for a prescription to be made for gases used during tests such as TLCO and N_2 washout.

Replies: Others shared similar versions of this 'problem'. Advice received included one local decision which allowed for a consultant signature in a test request to suffice. Other responses, including one "*from the garden*" noted that harm from lung function tests over a long period is zero and that resources would be better targeted on pharmaceutical matters. This was supported by another, suggesting a "*stay at home policy*" might be the only way to assure safety. A regular European correspondent indicated such a "*gas as prescription*" requirement was standard there and this might not be needed in UK, post-Brexit.

Finally, a regular forum poster helpfully directed all to an article in *INSPIRE*, in 2021 ('Thought of the day') and suggested all do a PubMed search for adverse incidents and lung function tests (spoiler alert: "*answer is ZERO*"). The lengthy reply ended with "*Conclusion: As long as all tests are under-taken according to recognised guidelines there should be very minimal risk. You are not prescribing something, so it is not a prescription*".

ARTP Association for Respiratory Technology & Physiology

Would you like to get your region talking and support other local ARTP members?

ARTP are looking to recruit Regional Leads in the following areas:

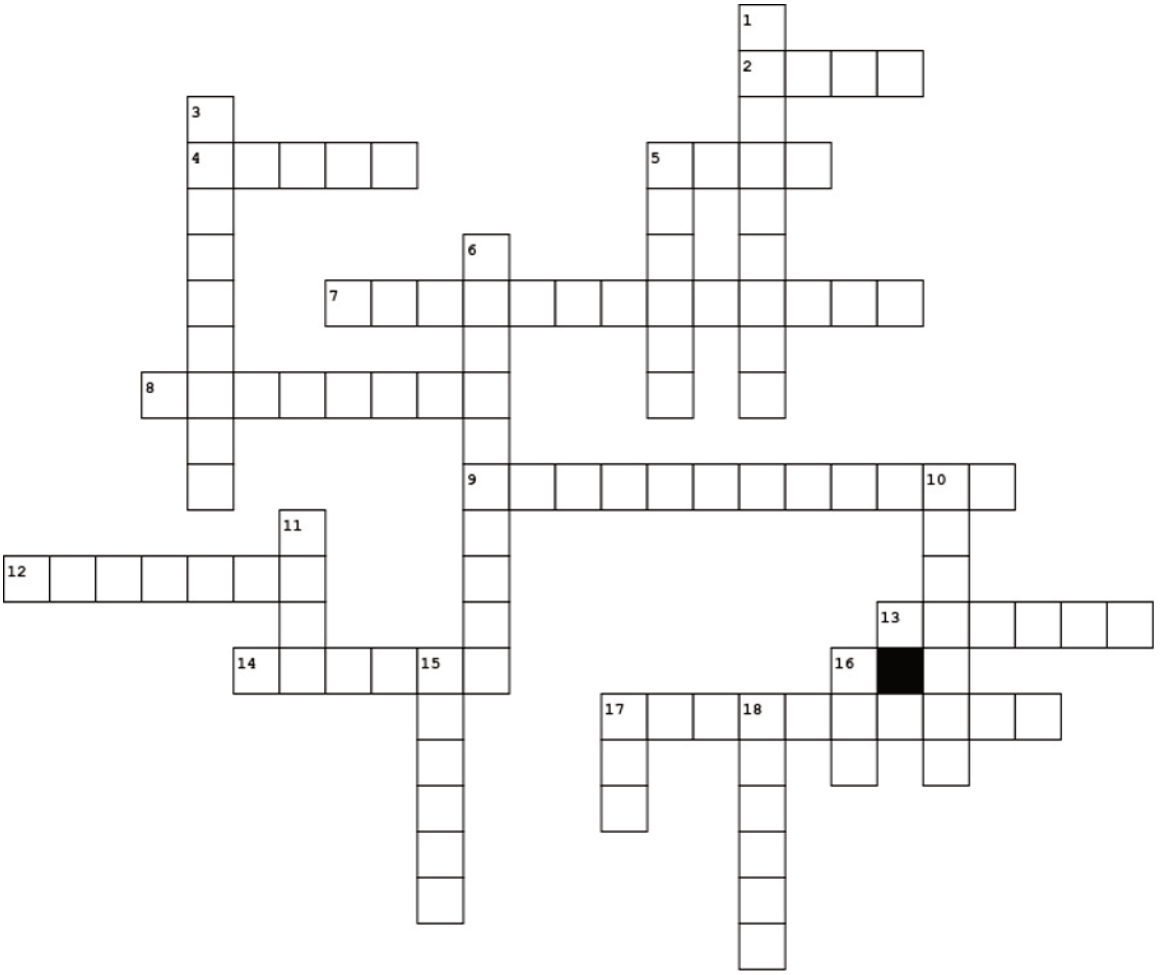
South East
West Midlands
Northern Ireland
East of England
East Midlands

As a Regional Lead, you will be responsible for facilitating Regional Network Meetings (a minimum of 2 per year) and will feedback any topics discussed and matters of interest to the ARTP Network Co-ordinator. The purpose of these meetings is to promote discussion on regional and national matters and offer an opportunity to share departmental practices and information such as SOPS, policies, audits and research. Questions and problems raised during these meetings can also be cascaded to the ARTP Executive board for advice and resolution, if needed.

ARTP would also like to hear from members who would be interested in attending Regional Network Meetings.

For more information, please contact the ARTP Network Co-ordinator, Geraldine O'Connell-Ramsay, at networkcoord@artp.org.uk

NO PRIZES!



ACROSS

2. Shorthand Charlie arranged for important body
4. I makes a joke about approval body
5. Move steadily as a truncated rose might?
7. Change the accident ratio for approval of standards
8. An Eton grin betrays a gas
9. Feline adrift new makes a difference
12. Her nail is changing to deliver drug
13. Pump up this amount of space in the lungs?
14. More room without me for this asthma device
17. Compute? Eh? I? combines for primary test interface

DOWN

1. TB era surrounds the Eternal City to measure pressure
3. Fido fun is moving from high to low concentration
5. Low pass, high pass, band pass or porous device
6. Arrest Dunc switched to converting energy?
10. Blood group act on Manchester Evening News for body part
11. Take a piece of my heart please to create prominent respiratory organisation
15. Previous healthy (hearty?) when breathing out
16. New form of high spirits can protect
17. Member for Parliament divided by oneself to create muscle measurement
18. God of thunder wields different implement for cavity

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