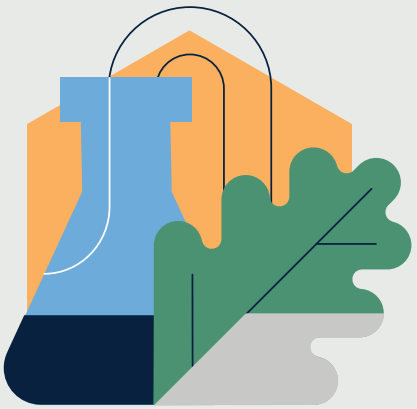


CLINICAL LABORATORY SUSTAINABILITY

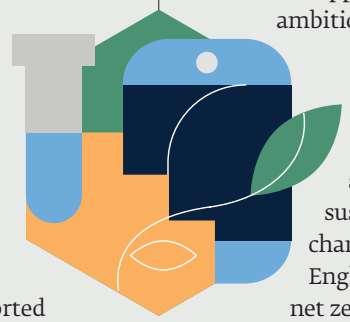
AN EVOLVING PICTURE

Sheri Scott, a Senior Lecturer in Biomedical Science at Nottingham Trent University, looks at the latest developments.

The climate and ecological crisis represent the most important threat to human health and wellbeing of the century. Climate change is in the news, in our politics and sustainability is consequently appearing on every organisation's agenda.

The Health and Care Act 2022, which came into effect this July, has placed specific duties on the NHS in England, to ensure that climate change is considered when making key decisions. This legislation ensures that NHS organisations are compliant with the UK's Climate Change Act 2008 and includes targets to reduce greenhouse gas emissions and improve the natural environment, including air quality. The Health and Care Act also mandates that the NHS "must adapt to any reported current or predicted impacts of climate change". These requirements correspond closely to the European Green Deal (EGD), which aims to make Europe the world's first climate-neutral continent by 2050. The EGD has a vision of overcoming climate change and environmental degradation challenges, transforming the EU into a resource-efficient and competitive economy.

What is clear is that the climate health emergency is real, and we all have a responsibility in enabling positive change. More than ever there is the need for a collaborative approach for these ambitions to be realised.



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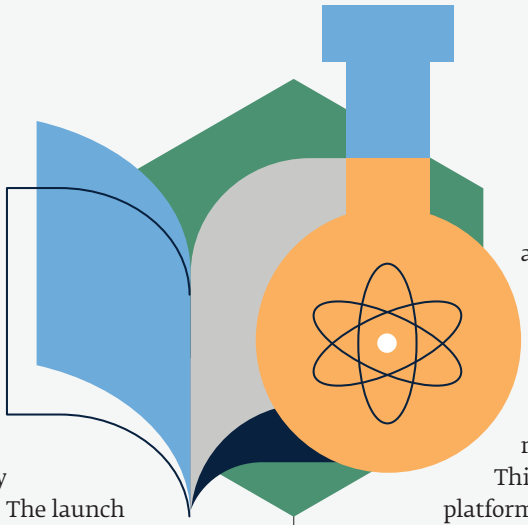
Play a part

During the past 24 months, the NHS has stepped up its game on sustainability and climate change. Every trust in England now has its own net zero strategy, and all NHS



procurements include a minimum 10% net zero and social value weighting. But how many of the green plans consider pathology?

It has become imperative that clinical laboratories play their own part in supporting these ambitions. Clinical laboratories are high energy and water consumers, and they generate huge amounts of hazardous and non-hazardous waste. Labs consume more energy per square metre than most other industries. A total of 40% of global CO_2 emissions come from generating electricity and, as such, labs contribute to the largest percentage of carbon emissions. When we consider that a typical new ultra-low temperature (ULT) freezer will consume as much electricity in a year as an average UK household – not to mention fume cupboards, laboratory automation and IT equipment – it is not surprising that laboratories typically consume 5–10 times more energy than office buildings. In addition to this, if we consider the use and disposal of single-use plastics, and the use of hazardous materials, the environmental impact of clinical labs is substantial (in 2014, lab plastics were estimated to contribute 1.8% to the total global plastic waste).

Green certification in the academic and research sector in the form of LEAF and My Green Lab programmes is well established, but how adaptable are these certifications to the tightly regulated clinical lab? Both these organisations are now branching into clinical lab sustainability but when it comes to patient safety and quality drivers, UKAS-accredited laboratories have limited leeway on making changes in the same way an academic or research laboratory can. However, there are changes that can be made that will not impact patient safety.

Key initiatives

I am fortunate enough to be involved in two key initiatives that will help clinical laboratories embrace more environmentally sound practices. The launch of the Centres for Sustainable Healthcare Clinical Labs Susnet network and the European Federation of Clinical Chemistry and Laboratory Medicine Green Labs (EFLM GL) Taskforce, pave the way for more sustainable practice.

The Centre for Sustainable Healthcare (CSH) is "an organisation that offers strategic input and consultancy on sustainable healthcare research and practice". This organisation works with Greener NHS and NHS England in sustainability education.

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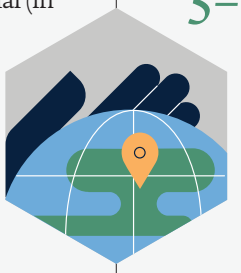


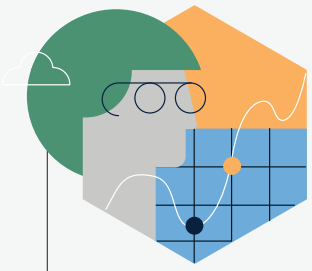
The CSH has a Sustainable Specialties networking programme, which mainstreams sustainability within different clinical specialities, so that sustainability becomes integral to the planning of health systems and healthcare practice in all aspects of healthcare. The Clinical Labs Susnet network is one of their newer specialities. Launched in June, Clinical Labs Susnet provides clinical laboratory professionals, the *in vitro* diagnostics industry, educators and students across biomedical and healthcare science with their own online sustainability networking space. This space provides a platform for like-minded individuals with a passion for sustainability to come together, share ideas, resources and collaborate to embed sustainable practice into pathology and associated healthcare laboratories.

Membership of this network is growing and conversations around projects, ideas and best practices are already taking place. As the membership and resource list grow, connections are being made that will foster collaborative research and promote service improvements. As lead for this network, our next objective is to offer panel discussions and training in collaboration with professional bodies and the EFLM GL Taskforce. The EFLM GL Taskforce aims to transform clinical laboratories into safe and sustainable spaces by reducing their environmental impact. It is hoped that collaboration and teamwork will bridge the gap in knowledge and skills among healthcare lab professionals, helping to deliver more sustainable practice.

The main aim of the taskforce is to facilitate the implementation of efficient and more environmentally sound everyday actions within laboratories at an international level. This aims to minimise energy, water, and hazardous chemical use, as well as reduce waste generation within the lab environment, without compromising the quality of healthcare we have come to expect. The hope is for EFLM to lead the laboratory medicine community in the shift to carbon neutrality and it recognises good collaboration among the EU healthcare systems is needed to ensure environment-friendly laboratories in the future.

Clinical laboratories can limit their

environmental impact and provide sustainable services by making reductions in four key areas – energy consumption, water consumption, waste production and use of hazardous chemicals.



"It is through partnerships that collaborative change will be recognised"

Guidelines

The taskforce aims to achieve safe and sustainable space transformation, by providing guidance on ways to make these reductions and providing ways to adopt efficient actions to minimise energy, water, and hazardous chemical use.

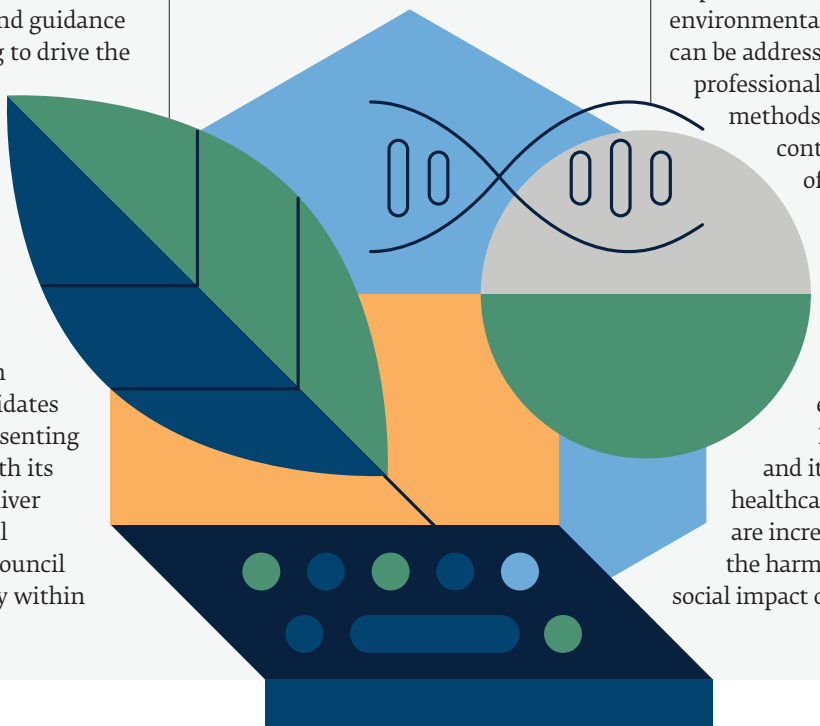
The initial objective of this new EFLM Taskforce was to create "Green Lab" guidelines, target criteria, and key recommendations for sustainable practices in clinical laboratories (a Green Lab Guide) before implementing a system of transition and annual EFLM certification.

Co-authored by the core members of the taskforce, these guidelines are now published and provide key information and justification for manageable change, and it is hoped that these changes will be embraced and adopted as part of wider sustainability agenda of the NHS and other European Healthcare institutions.

Clinical lab sustainability now has a platform for collaboration and guidance for change, but who is going to drive the changes we need to see? This question has been answered in the call for sustainability champions.

The Association for Clinical Biochemistry and Laboratory Medicine (ACB) put out a call for voluntary Sustainability Champions in Spring. The successful candidates share responsibility of representing the organisation to work with its members to develop and deliver a strategy for environmental sustainability. As an IBMS Council member, I have a role to play within the IBMS to support lab sustainability. It will be through sustainability champions that the training materials produced by the EFLM GL Taskforce will be distributed to its members, and it is through partnerships that collaborative change will be recognised. At this year's UKLABMed22 in November, we will see a sustainability workshop supported by key stakeholders including the institute and the British In Vitro Diagnostic Association (BIVDA), and through other key events in the lab professionals' calendar, we can expect to see similar opportunities to develop knowledge and skills in lab sustainability.

The Sustainability Champion role can also be found in our hospitals. Many organisations and NHS trusts have advocates for sustainable practices. It is important that we as a profession join our voice to the collective. Upon researching clinical lab sustainability this year, it was worrying how little lab sustainability had been considered in hospital sustainability plans and agendas. Going forward, we need to join in these conversations and represent our profession. One way of achieving this is for lab professionals to consider the sustainability champion role within their trust or organisation, thus ensuring that the "hidden profession" has a voice. By working across all professions, a positive sustainable impact can be achieved either through education, such as sustainability training (induction and local CPD seminars) or through projects such as reducing waste by more environmentally lean practice, embracing appropriate POCT or by the elimination of error as part of sustainability service improvement (SusQI).



Embedding sustainability

SusQI is a CSH term, which describes the embedding of sustainability into quality improvement. It is a way that social and environmental challenges in healthcare can be addressed as a core part of professional practice, using recognised methods for change in order to contribute to the improvement of healthcare services. I hope to see the implementation of SusQI into routine practice and I wish to bring the fundamentals of this and sustainability awareness into all levels of education and assessment. Positive change is coming and it is gratifying to see that healthcare laboratory professionals are increasingly motivated to reduce the harmful environmental and social impact of our health systems. BMS