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SUSTAINABILITY

How to achieve a net zero carbon NHS during a pandemic

Despite covid-19, the NHS remains committed to carbon net zero by 2040. **Emma Wilkinson** asks how this could be possible

Emma Wilkinson *freelance journalist*

In January 2020, an expert panel was tasked with setting out a practical and evidence based plan for a greener NHS. A week later, the World Health Organization named covid-19 a “public health emergency of international concern,” before declaring a pandemic in March.

Yet in October that year, despite the impact of the virus, NHS officials pledged that the service would be carbon net zero by 2040. There was no choice, an NHS report concluded: ill health, health inequalities, and the climate crisis are all inextricably linked.

The pledge takes into account emissions the NHS controls directly as well as those where it can have influence, such as the medicines supply chain. With the NHS accounting for 4% of England’s total carbon footprint, this is no small undertaking. While figures suggest there has been a reduction of 26% from 1990 figures, to get to zero the NHS will have to reduce its footprint by an amount equivalent to the entire emissions of Croatia.

NHS chief sustainability officer and doctor Nick Watts says other countries’ health systems, including Germany and the US, have also set up departments to work out how to do this. In 2008 the UK team numbered four or five people—by the time global leaders gather in Glasgow for the UN climate change conference (COP26) in November this year, this number will have grown to around 150, across every part of the national system, Watts says.

He estimates that around 65% of UK hospital trusts are now developing a net zero strategy, despite being in the middle of a pandemic, “because they’re excited and want to figure out how to do it.” Some are blazing ahead—he points to Bristol, Cambridge, Newcastle, and UCLH in London as examples. “Pretty much every trust says, ‘We have this really great programme on plastic waste or on green space for our mental health patients.’ They all have something,” he says.

Buildings

NHS estate and facilities account for 15% of the services total carbon emissions—the rest is made up of drugs, anaesthetic gases, transport, medical equipment, and staff and patient travel, among other things. Net zero carbon hospital standards will be applied to new buildings but those account for less than a fifth of all NHS secondary care buildings.

Richard Hales, energy and sustainability manager at Cambridge University Hospitals NHS Foundation Trust, points out that upgrading older facilities is a much harder job because it means refurbishing the

fabric of the building to improve insulation and glazing. “We have to keep looking after the energy used when we’re using renewable energy. We don’t want heat leaking out through the walls, roofs, and windows.”

His trust is trialling technology which uses solar panels that, when the sun is shining, will run a large chiller unit entirely, providing air conditioning to the Rosie Hospital in Cambridge. Additional energy is stored in batteries built into the front of the unit for later use. The clever bit, says Hales, is the software that tops up the batteries from the mains supply only when it has to and only when the national grid is at its greenest and cheapest. “It’s trying to make sure that we squeeze every bit of value out of low carbon kilowatt hours. This hasn’t been done anywhere before, as far as we’re aware.”

Across a year this enabled the hospital to achieve a 42% reduction in carbon compared with when the chiller system was running off mains electricity. In an older part of the hospital, a heat pump system that also generates domestic hot water has replaced old chiller units. The reductions in carbon emissions are expected to be 60-70%. The plan is to keep refining the technology across the campus.

For the past decade the trust has had a rolling fund to reinvest energy savings in green infrastructure, which has kept the big projects going. It means they have held steady on their carbon footprint as the hospital has become busier. Hales says, “We now need to replicate this type of project in other parts of the trust in order to decarbonise the estate.”

Green GPs

As for primary care, in England there are around 7000 GP practices in 9000 buildings that will need support to make changes. NHS Property Services—the landlord for some health centres—is well into a detailed three year improvement plan involving cutting emissions from gas and electricity, installation of smart meters and LEDs, and other building upgrades.

The Royal College of GPs’ Green Impact for Health toolkit outlines the steps practices can take. About 1000 practices are registered, says Terry Kemple, sustainability lead for the college. He adds, however, that, in general, NHS support is “virtually non-existent.”

“We’re all doing this on a voluntary basis. Lots of us feel unsupported or under-resourced. In most

practices there's a lone enthusiast trying to make some progress and, really, that's almost impossible."

There are exceptions. Four years ago, practice manager Karen Creffield joined Frome Medical Practice—a surgery serving 30 000 patients in Somerset. Having worked in higher education, she was shocked how little was happening on sustainability. Frome have now embedded it into everything they do and have become the first practice in the country to receive National Lottery Climate Action Funding in collaboration with the local council. It will enable them to do more deprescribing work and appoint a Green Health Connector to join their social prescribing team.

"In primary care people often feel like they haven't got time to do anything, but if you make it part of your core values it doesn't take more time, it's about changing perspective," she says.

Serious action

Watts says the NHS is having "serious conversations" with all their suppliers about meeting their net zero commitments. And they rarely get pushback from companies, he says. "You set clear long term signals and you demonstrate you're serious that within the decade the NHS will no longer purchase from anyone that doesn't meet our commitments on net zero. We say it as regularly as we can because we want to make sure that everyone understands how deeply we feel about the importance of this."

A £50m (€58m; \$68m) programme to install LED lighting across hospitals is about half way through and the NHS is on track to start testing the first prototypes of electric ambulances, he adds. "In the past six months a quarter of a billion pounds has gone into the system to decarbonise the estate. That's never happened before. And so, across a large number of trusts, all sorts of things are suddenly happening."

Great Ormond Street Children's Hospital was the first hospital in London to declare a climate emergency in March 2021. They also developed the Clean Air Hospital Framework, which from this year will form part of the mandatory reporting for hospitals estate teams.

Suggestions from children and young people have led to projects such as "play street" days where Great Ormond Street was closed to traffic and community activities were held in the clean air space instead. "People were able to visualise what that street could look like in a different world," says head of sustainability Nick Martin. Plans are now being made with the local authority to pedestrianise the street permanently.

The pandemic has and will have an impact on carbon emissions. Watts thinks it has been good and bad, balancing factors such as increased personal protective equipment (PPE) use with digitisation in primary care and reduced travel. "We need to make sure that we grab those parts that have been good and retain them. And then look at questions around recyclable PPE, PPE made closer to home, and how to move away from incineration."

One of the most positive aspects is how much of a priority tackling carbon emissions is for those working for the NHS, even after the pressures of the past 18 months. Watts points to an as-yet-unpublished staff survey asking for views on NHS action on climate change: nine out of 10 respondents said they support or strongly support it. "They want to see the NHS act in a more environmentally sustainable way, living up to 'first do no harm'."

dosing, so patients don't feel the need to puff as often, could cut carbon emissions significantly. "The lowest hanging fruit, as we speak, is switching from the metered dose inhaler," says Terry Kemple, sustainability lead for the Royal College of GPs. "Asthma is still poorly managed most of the time so it's a win-win situation."

A new suite of indicators in the GP Impact and Investment Fund will incentivise improved inhaler prescribing both to improve management of respiratory disease and cut carbon emissions. From 2022-23 primary care networks will be rewarded for increasing the use of preventative inhalers and avoiding the prescribing of short term reliever inhalers.

From October this year rewards will be offered for practices to prescribe lower carbon alternatives to metered dose inhalers. Says Watts, "That should reduce the emissions of those inhalers within the next two to three years by something like 470 kilotonnes of carbon—which is enormous."

Inhalers

Medicines account for 25% of emissions in the NHS and inhalers make up 3% of that. More efficient inhalers that deliver accurate, effective