The World Health Organization has described climate change as “the greatest threat to global health in the 21st century” (Bit.ly/WHOClimateChangeHealth) and estimates that air pollution – primarily from burning fossil fuels – already kills 7 million people prematurely per year worldwide (Bit.ly/WHO10Threats). Although tackling Covid-19 is the immediate priority, climate priorities must help shape post-pandemic recovery plans (Figueres and Rivett-Carnac, 2020).

The healthcare sector is a major contributor to climate change and has a role in resolving it (Royal College of Nursing, 2019). If the world’s health services were a country, it would be the fifth-largest carbon emitter on the planet (Health Care Without Harm, 2019). The NHS produces 5.4% of UK carbon emissions, equivalent to greenhouse-gas emissions from 11 coal-fired power stations (RCN, 2019). Many healthcare practices also produce environmentally harmful waste and by-products. All NHS staff and organisations have a role to play in reducing the NHS’s environmental footprint but the nursing profession – as the largest user of equipment and consumables for delivering care – has a particularly pivotal role.

A health emergency
The climate emergency is also a health emergency. Air pollution is the biggest environmental health threat in the UK: up to 36,000 deaths a year in the UK are attributed to long-term exposure to human-made air pollution (Public Health England, 2019). A recent study showed that, across nine English cities, out-of-hospital cardiac arrests and hospital admissions for stroke and asthma increased by 673 on high-pollution days from the average (Williams et al, 2019).

Climate change is also leading to more extreme weather events, with heatwaves and flooding exacerbating health conditions such as skin cancer, heart attacks, anxiety disorders, strokes and severe asthma attacks (NHS England, 2020). Rising temperatures also increase the potential spread of infectious diseases such as Lyme disease and encephalitis (NHS England, 2020) and, although there is no established link between the coronavirus...
pandemic and climate change, air pollution is likely to have exacerbated the effects of Covid-19 (Carrington, 2020).

**How does healthcare contribute to climate change?**

It is often assumed that the biggest health-care contributors to climate change are buildings and transport. However, 80% of the NHS in England’s annual 22.8 million tonnes of carbon emissions relate to treatment and care, with 60% caused by equipment and consumables (Centre for Sustainable Healthcare, 2017).

In England, NHS waste represents around 2% of commercial and industrial waste, with infectious waste requiring particularly high-energy disposal processes (PHE and NHSE, 2018). The RCN (2018) estimated a potential annual saving of around £3.5m if 20% of infectious waste was reclassified as offensive waste through better waste segregation.

The NHS is Europe’s largest consumer of single-use plastic; plastic makes up 22.7% of all NHS waste but only about 5% is recovered (Percival, 2019). Between 2013 and 2018, the NHS in England used >600 million disposable cups – equivalent to 300,000 a day – and in an average year the NHS spends £2.35m on >1.5 billion boxes of examination gloves (UK Health Alliance on Climate Change, 2020). If nurses make plastic-reduction choices, this will reduce carbon emissions, disposal costs and plastic pollution.

**The nursing contribution**

Progress is already under way: between 2007 and 2017, the English health and social care sector cut carbon emissions by 18.5% and saved 85% of waste from going directly to landfill, despite a 27% increase in clinical activity (PHE and NHSE, 2018). The NHS is also addressing water use, plastic waste and air pollution, with the UK government declaring a climate change emergency in 2019 (Box 1) and health services in devolved UK countries adopting their own green policies and action plans. However, it is recognised that the NHS needs to increase its efforts (HCWH, 2019; PHE and NHSE, 2018), especially in light of the UK target to reach net-zero carbon emissions by 2050.

In January 2020, NHS England launched the For a Greener NHS campaign, to plan how to reach net-zero carbon emissions, and mobilise staff and hospitals to address the causes of air pollution and climate change (Box 2). In line with NHSE’s (2019) commitments, outlined in The NHS Long Term Plan, a new NHS standard contract requires NHS providers to demonstrate actions to address air pollution, reduce their use of single-use plastics and identify other areas for carbon reduction by March 2021 (NHSE, 2020). The campaign is supported by the UK Health Alliance on Climate Change (UKHACC), whose members include the RCN and other professional healthcare groups, backed by The Lancet and The BMJ. UKHACC has identified opportunities for improvement in:

- Procurement and waste;
- Food;
- Transport and air pollution;
- Energy;
- Advocacy and leadership.

It is working with the Sustainable Healthcare Coalition – a partnership between industry and health agencies – on reducing the environmental footprint of procurement and clinical activity (UKHACC, 2020).

**Examples of good practice**

Nurses are encouraged to make sustainable procurement choices through the RCN’s Small Changes, Big Differences campaign (Bit.ly/RCNSmallChanges).

At Colchester Hospital University NHS Foundation Trust (now part of East Suffolk and North Essex NHS Foundation Trust), staff introduced a single-glove dispensing system, reducing waste and contamination caused by torn boxes and gloves coming out in handfuls.

Another example of good practice, shared by the NHS Sustainable Development Unit, is a project undertaken by Royal Liverpool and Broadgreen University Hospitals NHS Trust, where theatre staff worked with suppliers to design pre-prepared surgical procedure packs to be used instead of individually wrapped products (Bit.ly/RLBMedicalWaste). This reduced packaging waste by 90% (2.6 tonnes a year) and saved £175,000 per year in staff time.

Elsewhere, nurses are working with clinicians and suppliers to make dressings packs less wasteful by exploring what could be omitted or replaced, and tailoring packs for hospital and community use.

University Hospitals Coventry and Warwickshire NHS Trust has replaced disposable sharps bins with reusable ones, reducing the amount of incinerated plastic (UHCW NHS Trust, 2018). It is also replacing ward clinical bins with a bag-to-bed system, to improve waste segregation and divert clinical waste into the offensive waste stream (UHCW NHS Trust, 2019).

Emergency department clinicians at Royal Devon and Exeter Foundation NHS Trust are also challenging wasteful practices after finding that over half of cannulas fitted at triage were ‘just in case’ and never used. Education and cultural change reduced unnecessary cannulation, saving £27,830 in purchasing and waste, 8,409 kg of carbon dioxide a year, and reducing patient discomfort and infection risk (Sustainability Day Campaign, 2019).

At Gloucestershire Hospitals NHS Foundation Trust, specialist nurses are...
Clinical Practice
Discussion

Box 3. Case study: Royal Surrey County Hospital

Two years on, a nurse’s recycling initiative at Royal Surrey NHS Foundation Trust has turned into a grassroots movement to make the trust greener, with over 80 sustainability champions across the Royal Surrey County Hospital.

Catherine Cooper, a critical care outreach sister, was inspired to act after witnessing waste and plastic pollution on a Sri Lankan holiday. “I began trying to become plastic free and reduce my waste at home but, once you make small changes, you notice bigger problems everywhere – and hospitals are shocking for single-use plastic and waste. Obviously, some is unavoidable for infection control, but the hospital didn’t have recycling bins, so even domestic water bottles were not being recycled,” she says.

Ms Cooper began by introducing recycling bins in intensive-care staff rooms, putting up posters and spreading the word. At first she took waste home to recycle, then a colleague put her in touch with the trust’s sustainability manager, Darren Little, who was already recycling in a back office. They teamed up and it grew from there.

Having worked at the trust for over 20 years, Ms Cooper knew lots of people and word soon spread; she says “people wanted to make a difference, but didn’t know where to start”. It was a coordinated effort, with many staff recruited as sustainability champions at the trust’s annual sustainability day. Champions take responsibility for recycling in their own areas and, at the end of 2019, the trust opened its first dedicated recycling centre. Recycling general waste is now being extended to the wards; a trial integrating this into the hospital’s waste collection service was delayed due to the Covid-19 pandemic, but should resume soon.

The trust now has a Green Plan, covering energy, waste, travel, virtual meetings and changing practice. “Recycling is important,” says Ms Cooper, “but we also need to change people’s attitudes and ways of working, so they question themselves and the choices they make. As the trust’s sustainability ambassador, I’m the face of that. Also crucial are our sustainability champions, who push through our agenda every day.”

using digital consultations to reduce patient travel for outpatient appointments (Gilroy, 2019). Increasing digital consultation is one of the commitments that was outlined in The NHS Long-Term Plan (Box 2; NHSE, 2019) and accelerated during the Covid-19 lockdown; it could encourage greener working after the pandemic.

What more can nurses do?
Nurses should consider what sustainability means to them in their role and workplace. Sustainable nursing practice can improve care and release money for further service improvements. This might include using resources more efficiently, greener product choices or improving waste segregation. As well as thinking about what is needed, nurses should consider what is not needed. In relation to the spread of coronavirus, gloves are an obvious example of single-use plastics that can be justified to prevent infection, but there is still a risk of overuse. The potential influence of nurses as educators in hand hygiene is huge.

Perhaps most importantly, nurses can engage with procurement teams to define and influence sustainable product choices and criteria; some single-use plastics can be eliminated or replaced with environmentally friendly, washable and biodegradable alternatives. Nurses must persuade others to think in a circular, not linear, way in relation to reusing or recycling common items. For example, comparing wash and vomit bowls made from plastic or pulp means considering disinfection versus maceration and sustainability factors involved in use.

Other ways nurses can lead on sustainability include making the case for:
- Recycling and energy-saving initiatives;
- Compostable plates and cups;
- Staff bike schemes.
Nurses often underestimate how powerful a voice they can be, and even small actions can turn into something bigger, such as at Royal Surrey County Hospital (Box 3). Nurses also need to be clear about what they need from their organisations. As an example, to improve waste segregation, the right systems need to be in place. All English trusts are required to have a sustainability lead and a Green Plan. If your trust does not, ask your director of nursing to help make this happen; for smaller organisations, sharing resources with similar organisations may be possible.

Through education and advocacy, nurses are also powerful agents for change beyond their organisation. As a professional group trusted by patients and the public, they can use the links between the changing climate and health to support people in behaviours that are healthier for the planet and themselves, such as switching to active forms of transport (like cycling or walking) or to more plant-based diets (UKHACC, 2020).

References
Carrington D (2020) Is air pollution making the coronavirus pandemic even more deadly? theguardian.com 4 May.
Centre for Sustainable Healthcare (2017) We Work in Healthcare - Of Course We Care about Carbon. Oxford: CCSH.
Harrabin R (2019) Climate change: UK Government to Commit to 25000 Target. bbc.co.uk, 12 June.
Health Care without Harm (2018) Health Care’s Climate Footprint: How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action. Brussels: HCYW.
UK Health Alliance on Climate Change (2020) UK Health Alliance on Climate Change Response to the Greener NHS Consultation. London: UKHACC.