

Carbon footprint reduction through use of telephone consultations for stroke outpatients

Anthropogenic climate change will be the greatest threat to human health in the 21st century. The NHS currently contributes an estimated 5% to the carbon footprint of the UK and in October 2020 committed to reaching net zero carbon emissions by 2045¹. Patient and visitor travel account for around 7% of the NHS carbon footprint and 57% of the particulate matter (PM2.5) released into the atmosphere by healthcare-associated travel². It is recognised that ambient air pollution contributes to the incidence of stroke as well as older people and those with long-term health conditions being more vulnerable to the effects of climate change. It is therefore incumbent on healthcare professionals to seek opportunities to adapt our practice to minimise these effects for the health of our patients, ourselves and the population as a whole.

During the first wave of the Covid-19 pandemic, stroke outpatient clinics at BSUH were conducted by telephone instead of face to face. We assessed the impact that this had on reducing patient travel and our carbon footprint.

Method: 40 patients over 6 clinics were asked how they would have travelled to clinic if they had come in person. The number of kilometres of a round trip from home address to hospital was calculated for patients who would have travelled by car, using Google Maps. The average number of car kilometres that would have been travelled by patients per clinic was calculated and converted into kilograms of carbon dioxide equivalent (kgCO₂e) using the UK Government Conversion Factors for greenhouse gas reporting.



Results: 65% of patients (6.28 patients per clinic) would have travelled to clinic by car. The mean distance travelled per patient would have been 34.28km, equating to 215.28km per clinic. Using the conversion factor for an average petrol car, this equates to 37.5kgCO₂e per clinic saved by conducting telephone rather than face to face clinics. This is the equivalent of driving from Brighton to Bristol or the approximate daily carbon footprint of a UK citizen.

Discussion: Conducting outpatient clinics by telephone offers an opportunity to reduce the NHS carbon footprint and contribution to ambient air pollution. The CO₂e savings described are likely to be an underestimate as they do not include the emissions associated with public transport use (30% of patients sampled would have used public transport).

Not all journeys to and from hospital can be avoided therefore identifying how emissions associated with such journeys can be reduced remains important. In this patient group, active transport (walking, cycling) will not be feasible for all but should be promoted where possible for the health and environmental co-benefits. Other options include electrification of patients' vehicles, public transport and NHS fleet and decentralising outpatient clinics so that patients can be seen more locally, reducing the distances needed to be travelled.

An average hospital outpatient clinic with a similar number of patients would be expected to have a total carbon footprint of 210kgCO₂e³ and therefore will be important to identify where other CO₂e savings can be made to help mitigate climate change and the long term health impacts associated with this.