Virtual appointments—embracing the opportunity to reduce carbon emissions mustn't widen health inequalities

Virtual appointments can help the NHS cut its carbon footprint, but it shouldn't be at the expense of worsening health inequalities, say Evie Rothwell and colleagues

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The NHS turns 75 this year, but with this birthday milestone comes an urgent need to tackle several considerable, co-occurring challenges in healthcare delivery, climate change, and health inequalities. Scaling innovations can provide solutions to multiple problems and should be an essential part of our NHS recovery plan. Yet we must also ensure that the steps we take to make progress in one area don't inadvertently worsen conditions in another. Nowhere is this tension more evident than in the use of virtual appointments.

Covid-19 accelerated the routine use of virtual appointments and now these remote services have been woven into the post-pandemic landscape of how the NHS operates.[1] Virtual appointments have been lauded for helping the NHS to reduce its carbon footprint. Yet some commentators have raised concerns about the quality of care that can be delivered virtually, and it has been suggested that using remote services will further widen health inequalities.[2]

Carbon emissions contribute to climate change, which has a substantial impact on health in the UK and globally.[3] The NHS must treat the health fallout from climate change, yet it also bears some responsibility for these harms through its 4-5% share of England's carbon footprint.[4] As such, it is vital that the NHS remains committed to achieving its goal to reach net zero for the carbon emissions under its direct control by 2040.[5]

Virtual appointments primarily reduce healthcare carbon emissions by minimising the need for patients to travel. This might sound small, but when we consider that there were 122.3 million outpatient appointments in 2021-22,[6] it comes as less of a surprise to hear carbon emissions generated by patient travel equates to 5% of the NHS's total annual carbon footprint.[7] Indeed, Greener NHS have estimated that approximately 232 million road miles could be avoided annually by using virtual appointments.[7] This offers the potential to save 426 kilotonnes of carbon dioxide equivalent a year, which is equivalent to the annual energy use of approximately 57 500 homes.

Presented in this way, there is a climate based argument for many appointments moving online, yet there are other factors to consider. For example, the energy expenditure of the equipment needed to support virtual appointments might mean that some patients who live nearby will produce less carbon by travelling in rather than logging on. Current estimates show that net carbon savings from a virtual

appointment can be realised whenever the distance a patient would have to travel is more than 7.2km by car.[8] People living in rural areas or travelling for specialist input provided by tertiary centres are more likely to meet this criteria.[9]

Beyond the positive impact on carbon emissions, virtual appointments have the potential to reduce health inequalities by improving access to care for a wide range of people who would otherwise face barriers accessing services. Some evidence has shown that virtual care has a lower rate of missed appointments compared with in-person appointments and an increased retention rate for medication adherence.[9 -11] Online appointments can also better support people who live in areas where public transport is less available, and people who have lower incomes but are above the threshold to qualify for travel reimbursements.[12 13] Lastly but importantly, online appointments can minimise the amount of time people need to take off education and work through reduced travel time and efficient scheduling.[14]

Creating barriers

Yet, despite all these positives, virtual appointments pose a number of challenges and for some already marginalised groups there is evidence that they may limit, rather than improve, access to care. Older people, people with disabilities, or people living in deprivation may experience hurdles to logging on for virtual support because of limited access to IT equipment and poor digital literacy.[15] In 2021 88% of UK adults had a smartphone, but this was heavily weighted towards younger people, with 96% of 16-24 year olds having a smartphone compared with 78% of those aged over 55 years.[15] Similarly, internet use is not equal throughout the population: 6.3% of adults in the UK have never used the internet and only 81% of adults who identify as disabled are recent internet users, compared with 92% of the general adult population.[16]

In addition, people on a lower income are more likely to live in crowded accommodation and may struggle to find adequate privacy to be able to have a consultation about their health.[17] For people experiencing abuse at home, it may be actively harmful for services to only be available online.[18] Indeed in circumstances where personal interaction is thought to be particularly important, such as in mental health services, we need to urgently evaluate the impact of virtual services.[19 20] Only then will it be possible to recommend how they are best used in these patient groups.

Virtual appointments undoubtedly help to reduce the NHS's carbon emissions, which benefits all of us in the long term, and they can provide better support to those who are set up to access this type of care. But for other patients, virtual appointments risk compromising their quality of care and access. We need to target our provision of online care correctly to make the most of its opportunities, with particular consideration given to whether a virtual appointment is appropriate for the patient, their condition, and circumstances. Checking what type of consultation is required, whether there is an existing doctor-patient relationship to capitalise on, and if the patient has access to equipment and a safe and private space outside of an NHS setting would be three things to weigh up.

Patients who feel they receive a high quality of care virtually should be encouraged to use remote appointments. Healthcare professionals arranging and delivering these appointments should receive appropriate training, and hybrid options should continue to be offered so that anyone who prefers a face-to-face appointment can have one. Services must continue to evaluate the effectiveness of virtual appointments for different patient groups and ensure that any inequalities in access, uptake, and effectiveness are captured.

If the NHS is to meet its commitment to reach net zero by 2040, it will be essential to harness innovations that can accelerate the decarbonisation of the health service. Shifting to virtual appointments in the NHS is an excellent opportunity to reduce healthcare's carbon footprint, but it shouldn't be at the expense of worsening health inequalities.

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