

# SUSTAINABILITY SHOWCASE

## Low carbon home healthcare logistics



### Context

**Newcastle upon Tyne NHS Foundation Trust has creatively reacted to challenges posed by Covid-19 by identifying opportunities to trial and accelerate carbon reduction initiatives, including an eco-friendly home delivery service for patients.**

As with many NHS organisations, the Trust has responded to the pandemic by introducing virtual outpatient appointments for patients and staff are working from home where possible, eliminating the need for many to travel to hospital and lowering carbon footprint.

Further to these measures, the Trust has accelerated its [Climate Emergency Strategy](#) by trialling an innovative courier delivery scheme, distributing healthcare equipment and pharmaceuticals to patients.

An internally managed courier hub provides a centralised, efficient method of quickly transporting these items to and from patients' homes. This has involved contracting couriers using a range of vehicle types, including electric cargo bikes for short-range, local distribution.

The hub was established at the Freeman Hospital in North Newcastle in October 2020 and is now typically distributing over 300 items per day.

### The challenge

**With NHS travel and transport accounting for 3.5% of all UK road traffic, the development of greener transport is critical if we are to reduce harmful emissions, clean up our air, and improve health now and for future generations.**

Air pollution alone contributes to 1 in 20 deaths in the UK and is the number one environmental risk to public health in the UK. Reducing emissions would support the reduction of cases of serious health conditions including asthma, cancer, and heart disease.

As part of its Climate Emergency Strategy, the Trust explored options to minimise the environmental impacts of new home healthcare deliveries, especially in busy urban and suburban neighbourhoods currently heavily used by courier vehicles supporting communities in lockdown.



Clean Air and Zero Carbon Care are two of the three key goals in our [Climate Emergency Strategy](#) and our continued collaboration with ZMOVE demonstrates our ability to achieve these goals whilst improving the service that we offer to our patients.

James Dixon, Associate Director – Sustainability, Newcastle Hospitals

## The solution

As a Trust with a strong reputation for providing outstanding healthcare, it was important that Newcastle Hospitals explored more sustainable transport options to reach its net zero targets, whilst ensuring patients received their vital healthcare equipment and pharmaceuticals.

To deliver this solution, the Trust have been using ZMOVE, a local low carbon courier, to provide home deliveries to patients who live within five miles of the courier hub, based at the Freeman Hospital in North Newcastle. The ZMOVE team use two large electric cargo bikes to make up to 70 deliveries per day between 9.00am and 4.30pm.

ZMOVE plan deliveries using routing software that engages Google bike routing algorithm to maximise delivery efficiency and minimise cost. Each bike performs deliveries over routes of up to 40 miles.



## The results

Newcastle Hospitals has reported a significant reduction in their carbon emissions by trialling alternatives to standard combustion-engine courier vehicles, and in return is lowering the Trust's carbon footprint and has a positive impact on air pollution.

To put the initiative in to context, pictured below is a routing map from a typical two-bike service day (21st December).

The bikes performed 50 delivery runs in the last quarter of 2020, dropping and collecting 1418 items from Newcastle patients over a cycled distance of 1240 miles. The team averaged 5.8 deliveries per hour across this period.

**The social impacts of this bike-based approach include:**

- Significant environmental gains when compared to the use of a standard combustion-engine courier vehicles, with approximated savings of 549 kg of CO<sub>2</sub> equivalent and 1195 g NOx emissions over the period. (Using data from <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018> and <http://naei.beis.gov.uk/data/ef-transport>)
- Excellent patient experience offered by pre-delivery text notifications to patients, giving an accurate arrival time and enabling live tracking of delivery.
- Community safety improvements using small, low speed vehicles whose riders can easily interact with residents during transit. Audrey MacNaughton, spokesperson for Salters Bridge low traffic neighbourhood said: "Residents are delighted to see Newcastle Hospitals using bikes extensively in our neighbourhood – they demonstrate that Salters Bridge can be a fast link for safe commercial traffic and the bikes present much less risk to residents than larger vehicles (including electric cars and vans)."



If you'd like to share a sustainability solution or have a focus area you'd like us to showcase, please get in touch at [peter.lillie@supernetwork.org.uk](mailto:peter.lillie@supernetwork.org.uk)