



Donor Milk Depots:

Our strategy towards delivering a 'Net Zero' NHS



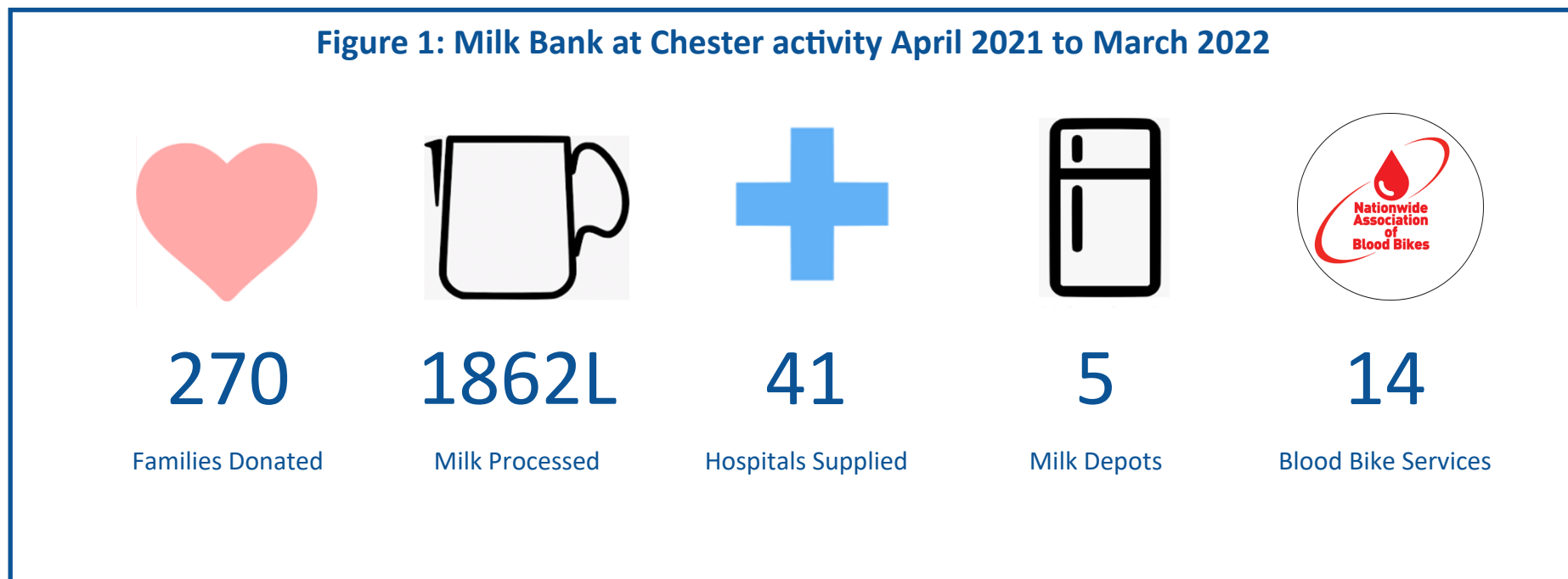
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Background

The Milk Bank at Chester (MBAC) is an NHS service based at the Countess of Chester Hospital and has provided safe, screened, pasteurised donor milk since 2003. MBAC currently supplies approximately 2000 litres of donor milk to around 40 hospital neonatal units annually (see Figure 1). The criteria for babies receiving donor milk differ at each hospital: the majority of recipient babies are under 32 weeks and / or under 1kg however in some areas milk is supplied to a much wider recipient group including babies born at term and babies in the community.

Figure 1: Milk Bank at Chester activity April 2021 to March 2022

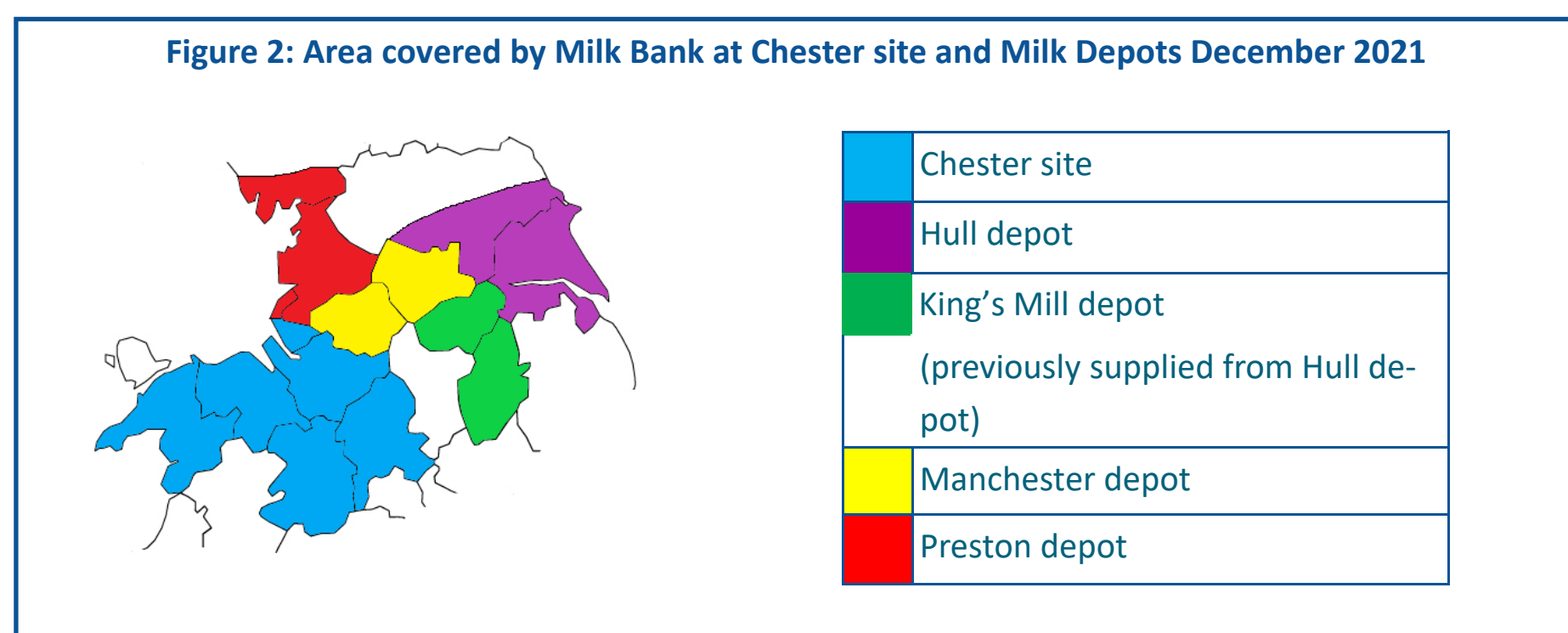


Milk is collected from donor families, processed at the Countess of Chester site then distributed by volunteer blood bike services via a network of milk satellites based in hospital neonatal units (see Figure 2). Each milk satellite stores around 20 litres of donor milk and is restocked on a monthly basis from MBAC's Chester site or more regularly if required to meet demand. MBAC supplies donor milk to northern England and Wales, with neighbouring NHS milk banks in Halifax and Birmingham supplying hospitals in West Yorkshire and the West Midlands. MBAC also regularly supports other milk banks by supplying milk to other areas if they are experiencing problems with meeting demand.

Aims

- NHS has set a target of achieving **net zero by 2045 for emissions** the NHS can influence
- MBAC's central hub and satellite strategy aligns well with working towards this target however **more could be done to reduce emissions**
- Project reviewed area covered by each satellite and mileage delivering milk
- Following analysis a **new potential satellite site** was identified: **King's Mill Hospital in Mansfield**, a Neonatal Unit with cot capacity of 18 beds (2 ITU, 4 HDU, 6 Special Care, 6 Transitional Care)
- King's Mill previously supplied with donor milk from Hull 78 miles away
- New satellite** planned to supply hospitals in Nottinghamshire and South Yorkshire (see Figure 2).

Figure 2: Area covered by Milk Bank at Chester site and Milk Depots December 2021



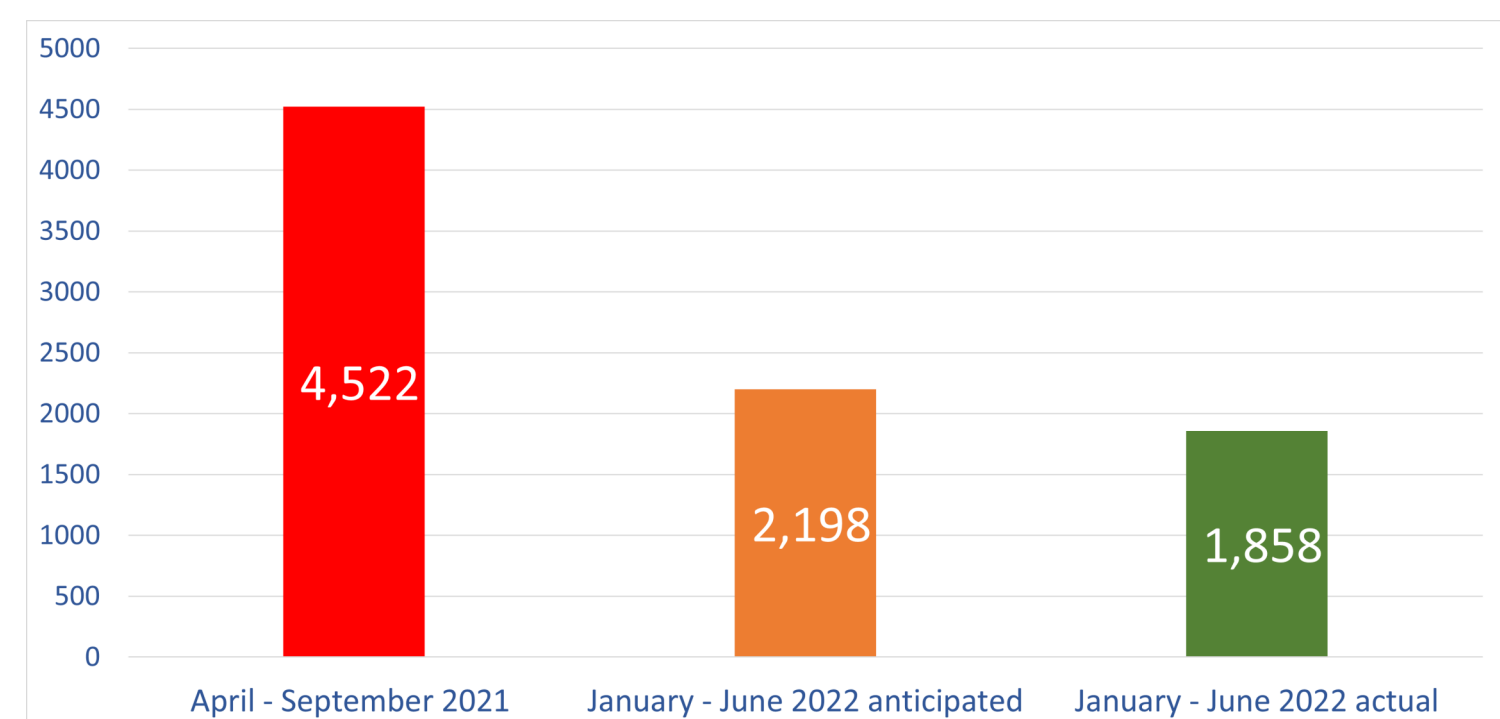
Methodology

- Analysed milk supplied and miles travelled from Hull to Nottinghamshire and South Yorkshire area in 6 month period
- Calculated **anticipated reduction in mileage** due to establishing new satellite
- Included additional mileage required to restock monthly
- New site opened in December 2021
- Compared actual miles travelled** in following 6 months with anticipated reduction
- Calculated reduction in fuel and associated carbon emissions
- Analysed milk issued to local area to identify any potential trends

Results

- Anticipated mileage reduction = 4522 to 2198 miles (48% decrease)
- Actual miles travelled = 1858 (57% decrease)

Figure 3: Miles travelled delivering donor milk to hospitals in Nottinghamshire and South Yorkshire



- Slight increase in milk issued in the local area
- 56% increase in volume of milk supplied to King's Mill
 - 24% increase in number of orders
- Increased orders did not impact miles travelled as King's Mill able to issue smaller amounts for own usage
 - Subsequently supplied donor milk to **3 new hospitals** in area

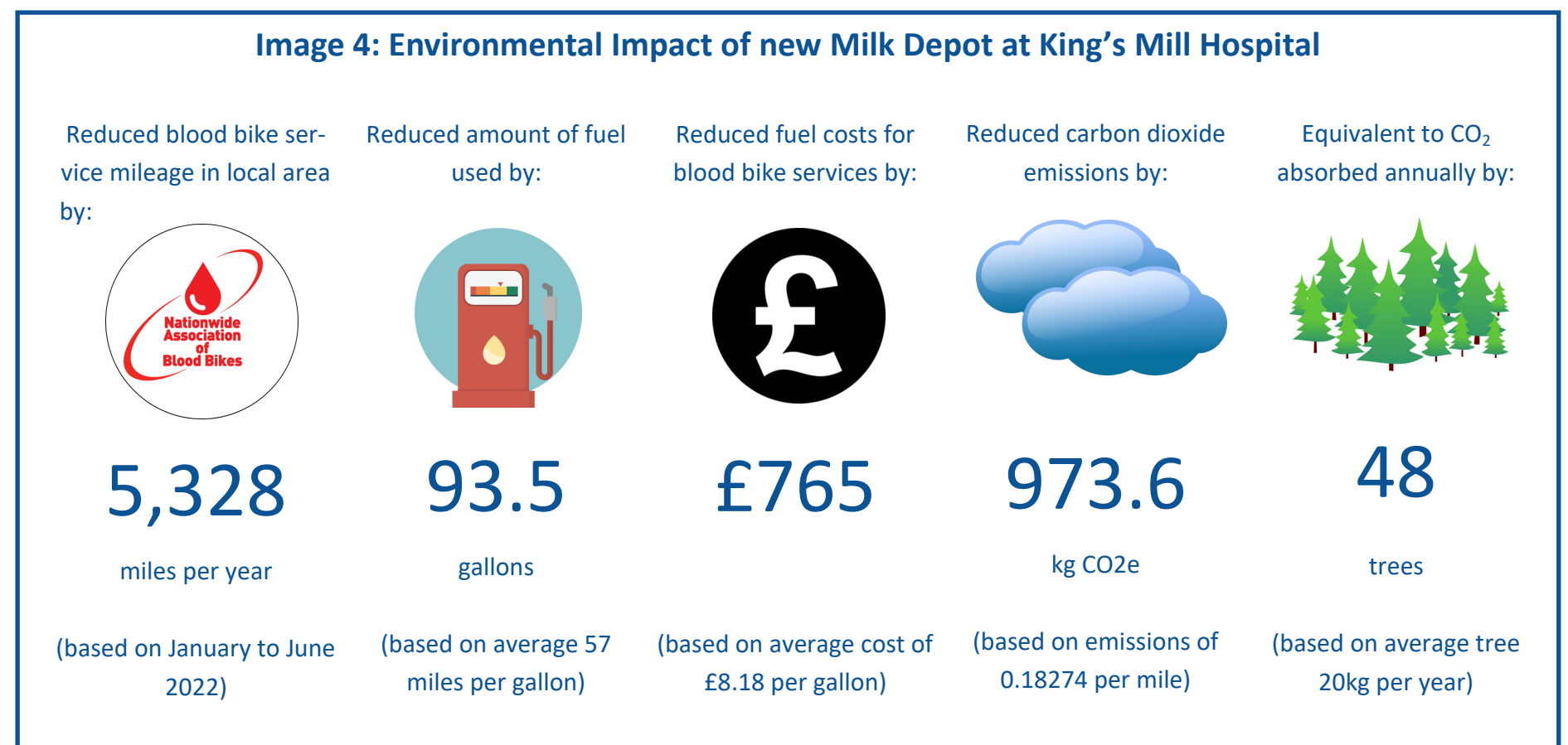
Table 1: Miles travelled delivering donor milk to hospitals in Nottinghamshire and South Yorkshire

	April - September 2021	January - June 2022 predicted	January - June 2022 actual	% change from 2021 to 2022
Total milk supplied (litres)	48	48	49	1%
Total number of orders	33	33	41	24%
King's Mill milk supplied (litres)	18	18	28	56%
King's Mill number of orders	12	12	26	117%
Miles travelled	4522	2198	1858	(57%)

Conclusions

- New King's Mill satellite has resulted in **larger than anticipated reduction in mileage**
- Strategy of opening a new milk satellite aligns with aiming to deliver a Net Zero NHS

Image 4: Environmental Impact of new Milk Depot at King's Mill Hospital



Increased demand for donor milk from the hospital hosting the satellite as well as demand from 3 hospitals not previously supplied may suggest the **geographic proximity to a local milk depot** may affect the perceived availability of milk, thus influencing demand.

Future Plans

- Recently purchased a larger freezer at King's Mill satellite resulting in less frequent restocks and further reducing mileage
- Analyse mileage in December 2022 to calculate annual reduction in mileage, taking any potential fluctuations in demand into account
- Further investigation to explore how this **success can be replicated** in other areas
- Expand this work to include identifying ways of **reducing the mileage travelled collecting milk** from donor families

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