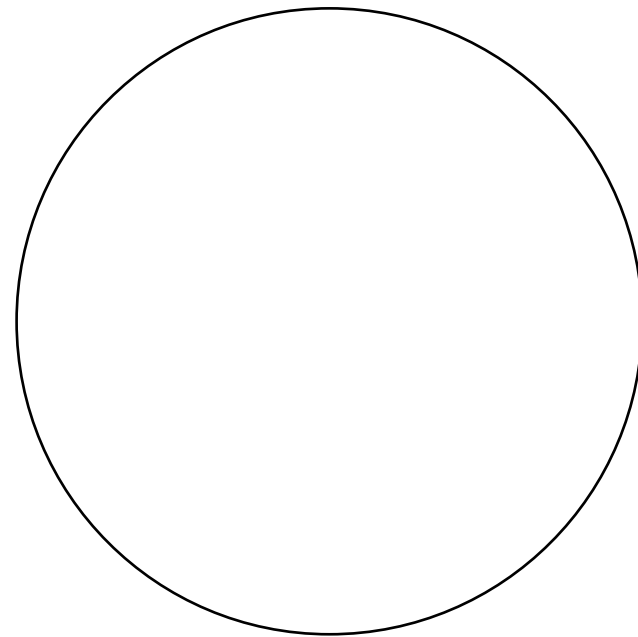


# How green is your pathway?

## How do we count the carbon?



**Dr Frances Mortimer & Catherine Richards**

UK Living Kidney Donor Network Meeting

23 April 2024



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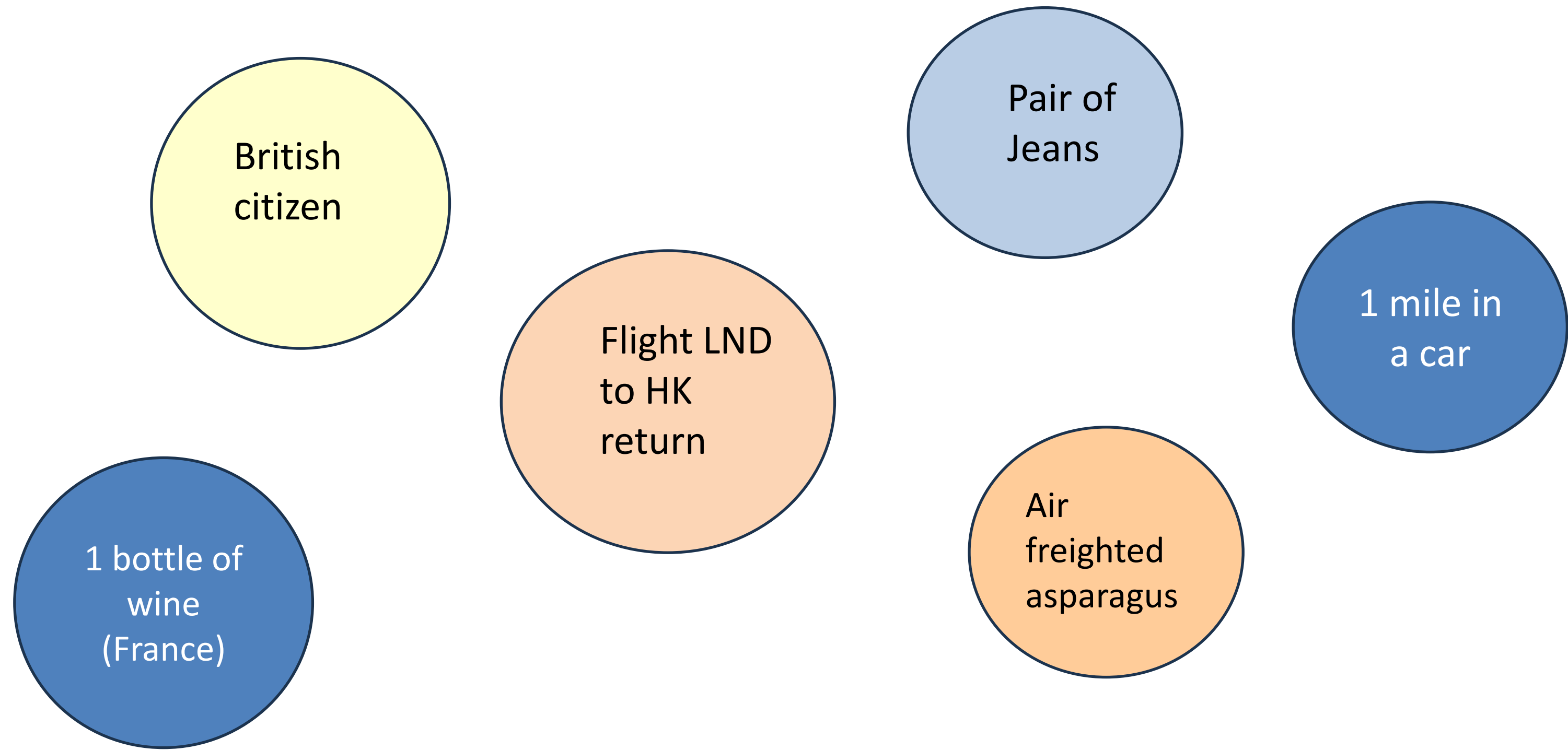


[sustainablehealthcare.org.uk](https://sustainablehealthcare.org.uk)



@sushealthcare

# How good is your carbon instinct?



## Carbon footprint: a rough guide to scale

- One mile in car ~ 0.3 kgCO<sub>2</sub>e
- A bottle of wine ~ 1.3 kgCO<sub>2</sub>e
- Air freighted asparagus ~ 4.7 kgCO<sub>2</sub>e
- Pair of jeans ~ 6 kgCO<sub>2</sub>e
- Flight LND to HK return ~ 3.5 tonnes CO<sub>2</sub>e
- British citizen ~ 13 tonnes CO<sub>2</sub>e

# What do we understand by carbon footprint?

*“...the best estimate that we can get of the full climate change impact of something”* Mike Berners-Lee *‘How bad are bananas? The carbon footprint of everything’*

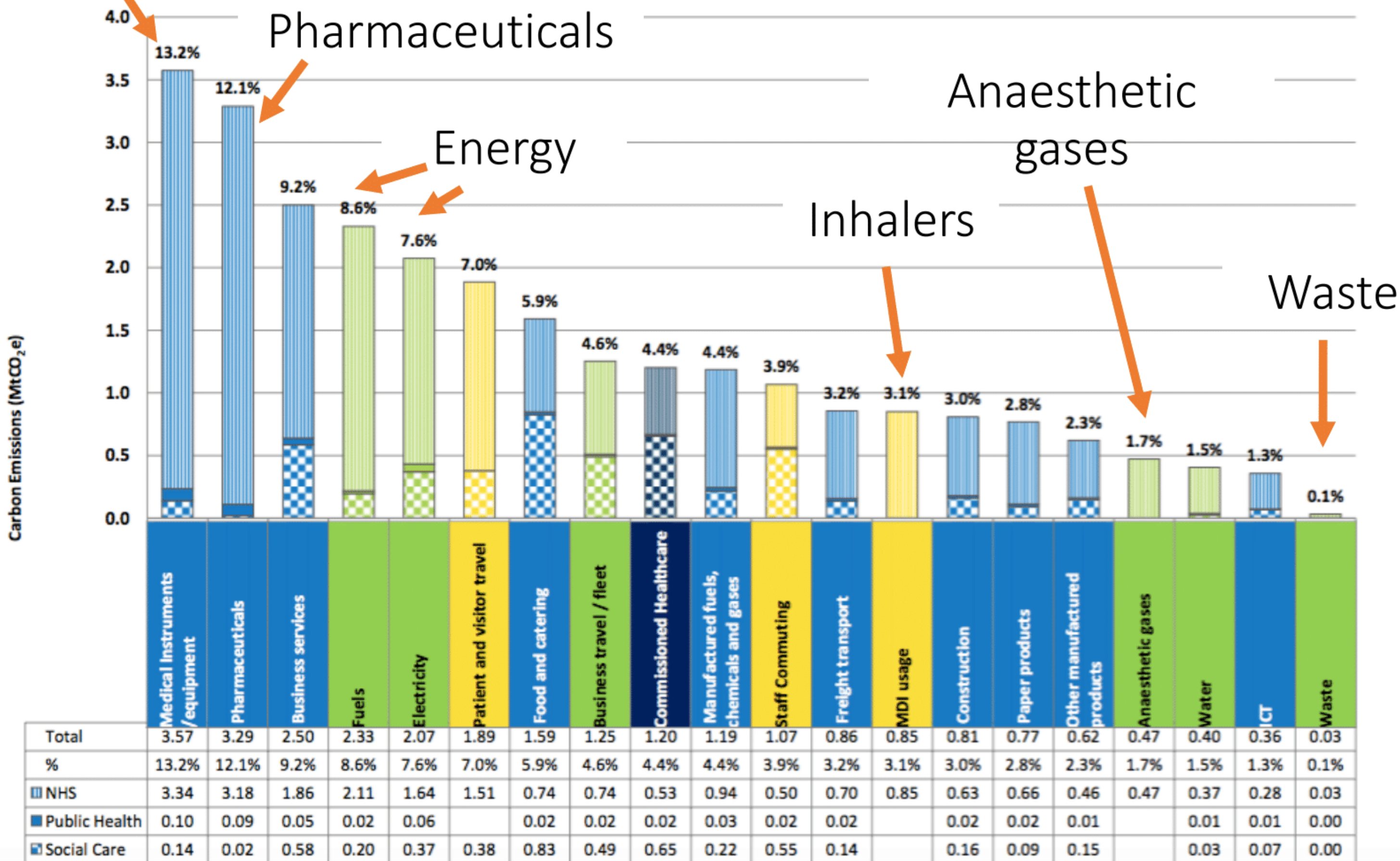
## Carbon footprint

- is the **sum of direct and indirect greenhouse gas emissions** which are attributable to a given process, product or organisation.
- Usually includes the **7 greenhouse gases** covered by the Kyoto Protocol
- Is expressed in carbon dioxide equivalents (**CO<sub>2</sub>e**)

# Medical instruments

# Carbon hotspots in healthcare

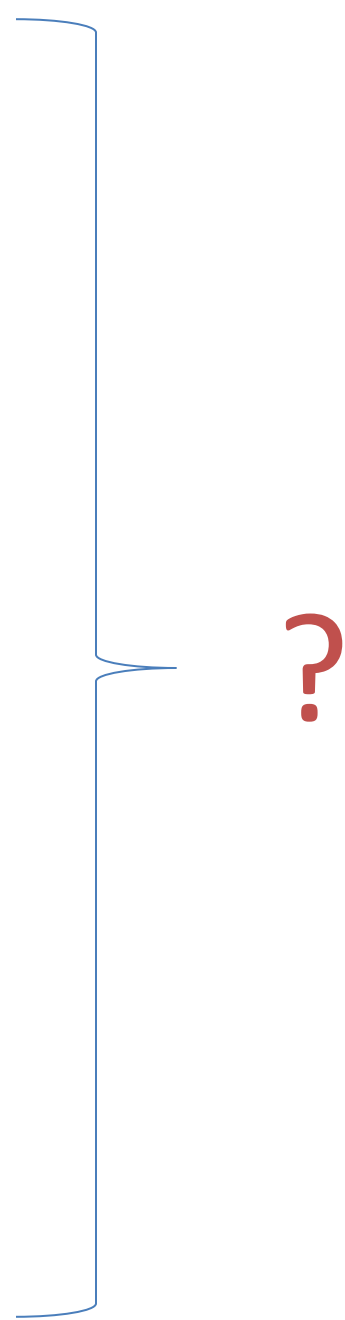
Figure 2. Health and Social care detailed breakdown 2017



SDU 2018. Reducing the use of natural resources in health and social care 2018 report

# Carbon footprint of LKD pathway – knowns and unknowns

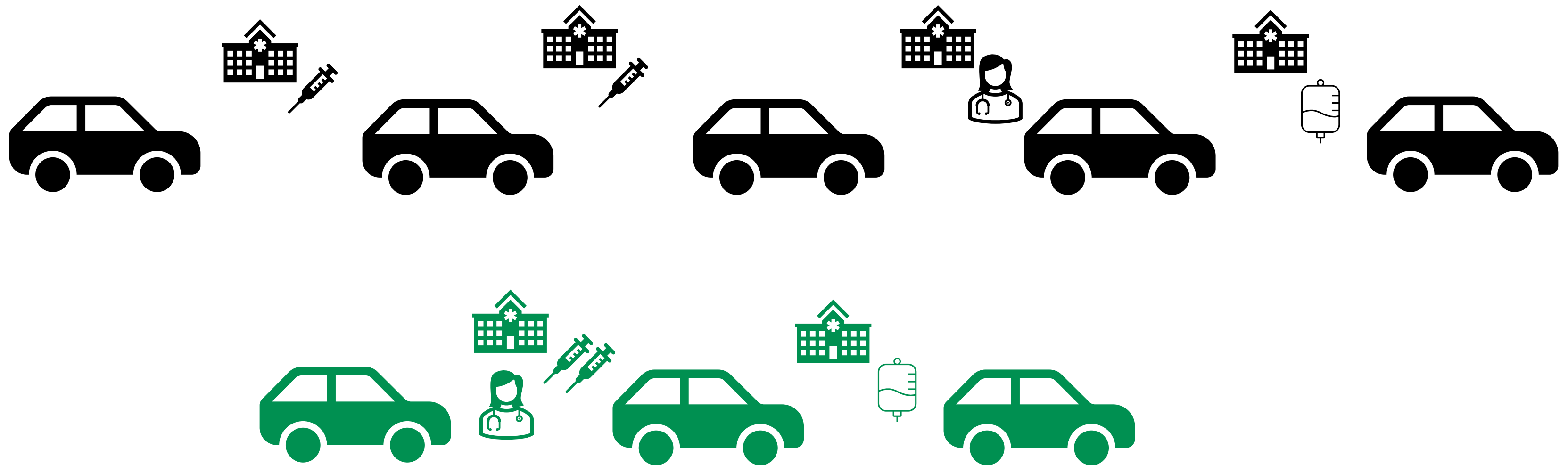
## Carbon footprint (kg CO<sub>2</sub>e)

- Phlebotomy: 0.15
  - Blood tube: 0.03
  - Lab testing:
    - Full blood count: 0.0024
    - Urea: 0.0321
    - Creatinine: 0.0678
    - etc
  - Chest X-ray: 0.8
  - MRI (general): 17.5
  - CT (general): 9.2
  - Patient travel to OP appointment: 4.24
  - Blood group
  - Tissue type
  - Virology screen
  - ECG
  - Echo
  - CV stress test
  - Renal function measurement
    - Clearance test
    - Differential kidney function (e.g. 99mTcDMSA scanning)
- 

# Carbon footprint of LKD pathway – knowns and unknowns (2)

How might we change the pathway if...

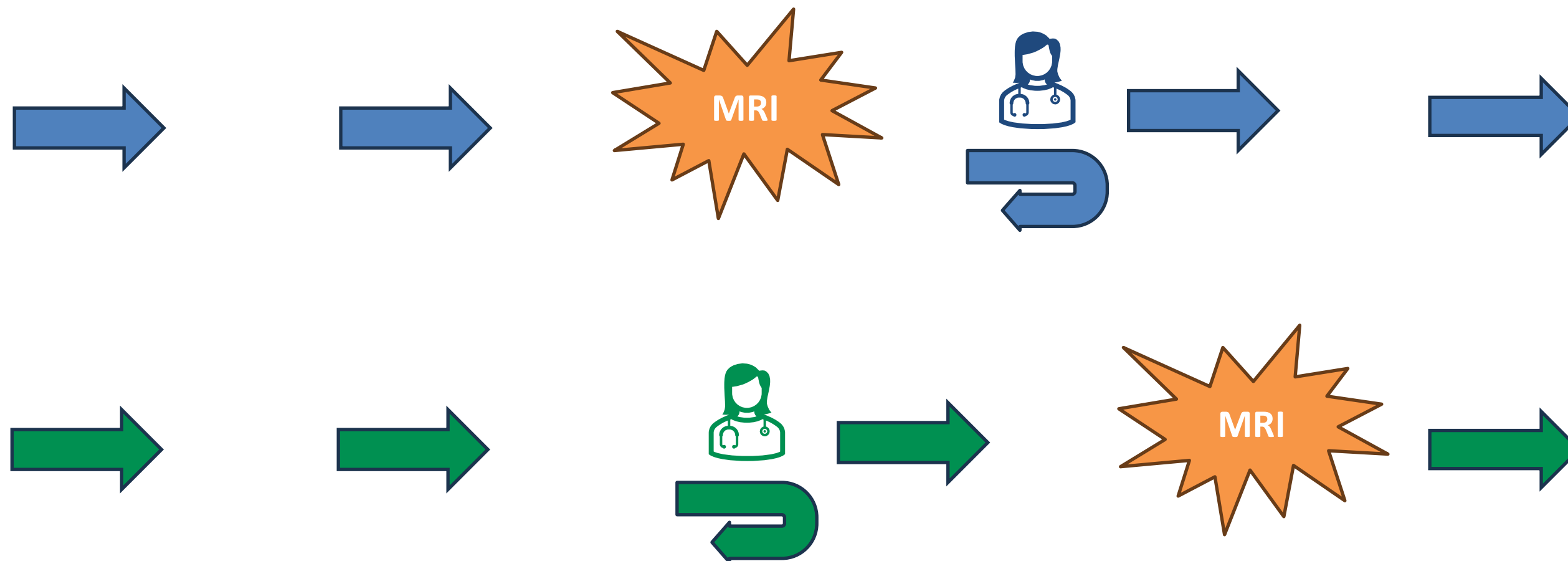
- travel to centre >> carbon of investigations ?



# Carbon footprint of LKD pathway – knowns and unknowns (3)

How might we change the pathway if...

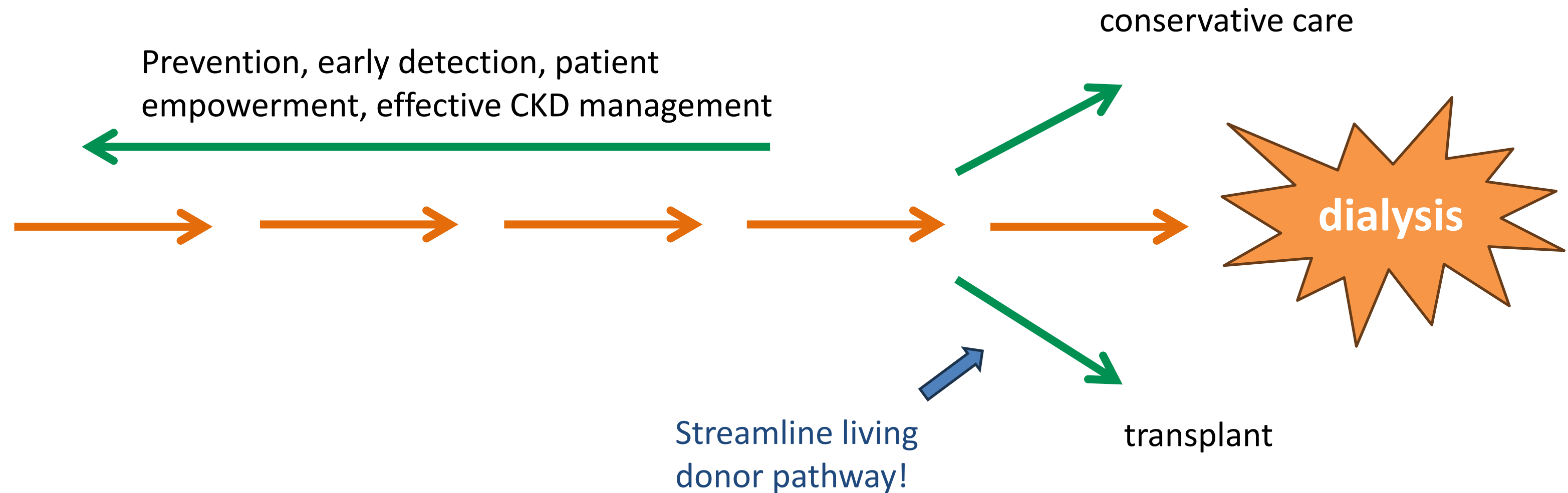
- one of the investigations (e.g. MRI) is a particular carbon hotspot?





Optimising the CKD pathway:

Dialysis is a **carbon hotspot** – how can we prevent the need for dialysis?



Carbon saving from avoiding 1 year on dialysis:

**3800 kg CO<sub>2</sub>e**

- **Reduce time** to transplantation
- **Increase access** to living donor transplantation  
(especially for minority ethnic groups)

 **Sustainable  
value**

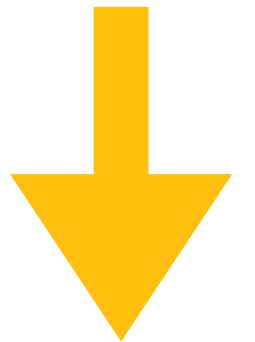
=



Outcomes for patients and populations



Environmental + social + financial impacts  
(the 'triple bottom line')



# Over to you!



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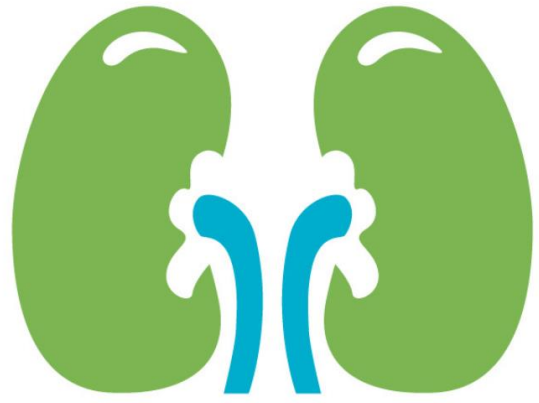
[frances.mortimer@sustainablehealthcare.org.uk](mailto:frances.mortimer@sustainablehealthcare.org.uk)



[sustainablehealthcare.org.uk](http://sustainablehealthcare.org.uk)



[@sushealthcare](https://twitter.com/sushealthcare)



# Kidney Care Sustainability Network

SCAN ME



[networks.sustainablehealthcare.org.uk](https://networks.sustainablehealthcare.org.uk)

607

members

21

events

222

topics

Joined ▾

[See network information](#)

## Upcoming events in the network



[Carbon Footprinting for Healthcare Course](#)

17 Oct 2023



[UKKA Sustainable Kidney Care Webinar 18th October 3.30-5.30pm](#)

18 Oct 2023

Revisions

Stream

About

Events

Topics

Resources

Members ▾



[Shazia Adalat](#) created an event in [Kidney Care Sustainability Network](#)

19 hours ago

EVENT



[UKKA Sustainable Kidney Care Webinar 18th October 3.30-5.30pm](#)

18 Oct '23 15:30 - 17:30 (BST)

Please do join what will hopefully be an insightful and timely webinar, hosted by Shazia Adalat and Suren Kanagasundaram. The speakers will enlighten attendees on the latest plans and developments...

Public 0

[Read more](#)



[Frances Mortimer](#) created a resource in [Kidney Care Sustainability Network](#)

2 weeks ago

RESOURCE



[ICHHD carbon calculator](#)

12 Sep 2023 • [Frances Mortimer](#)

This is a free online carbon footprint calculator for use in in-centre



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Sustainability in Quality Improvement



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