



GP emission footprints ***Non-clinical carbon***

Fri 3rd Sept

Greening the Primary Care Network

Dr Matt Sawyer



Dr Matt Sawyer



Medical doctor – GP for 15 years

Environmental MSc

Working on how to help primary care reach Net Zero

Runs own sustainability consultancy
seesustainability.co.uk

Carbon Literacy training

Carbon footprinting of practices



Today...

What is a carbon footprint?

The prize for taking action

GP carbon footprints – non-clinical

How to take action



What is a carbon footprint?



“A carbon footprint is the total greenhouse gas emissions caused by an individual, event, organization, service, place or product, expressed as carbon dioxide equivalent.”

Average UK Footprint (CO₂e)

- 35kg/day -> 13 tonnes/ year -> Over 1,000 tonnes/lifetime

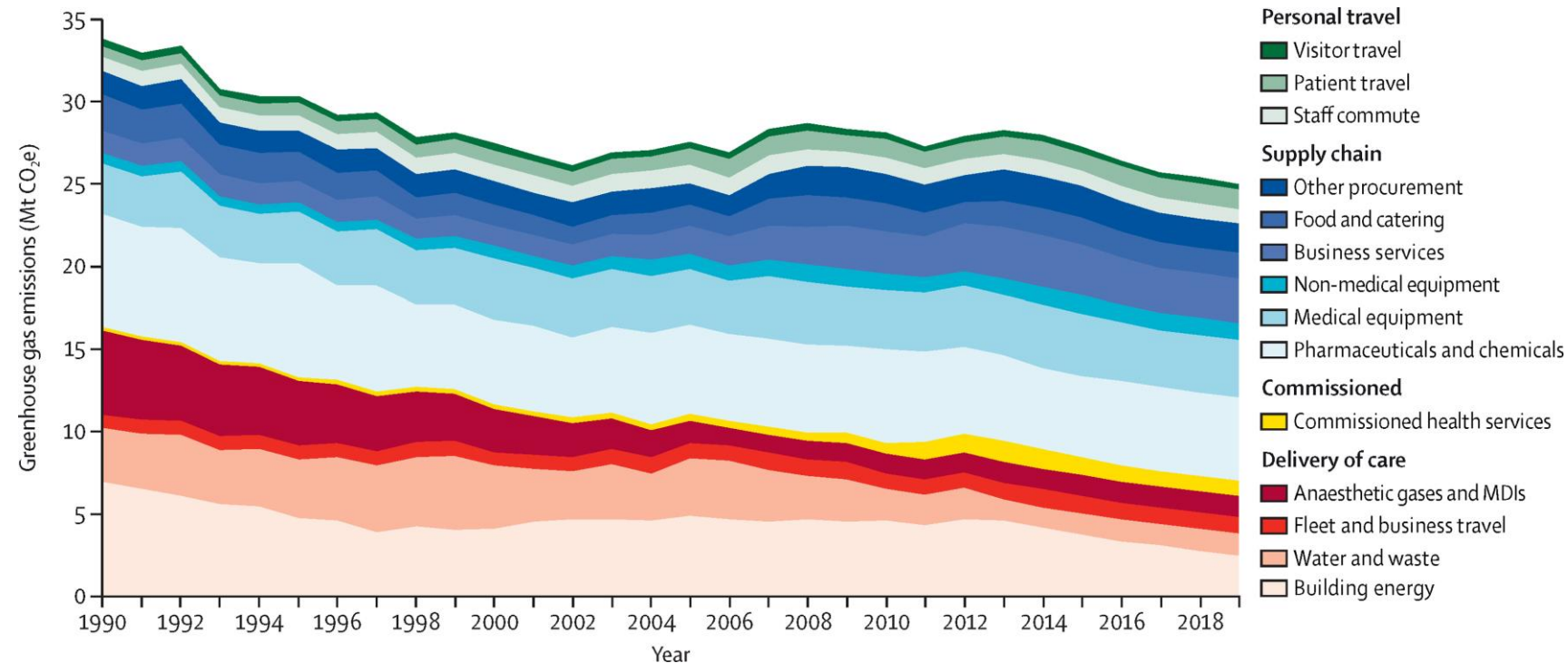
Aim (to limit warming to >1.5°C)

- 8kg/day -> 3 tonnes/year -> 240 tonnes/lifetime



NHS carbon contributions...

and effect



The mortality cost of carbon

“Adding 4,434 metric tons of carbon dioxide in 2020 causes one excess death globally in expectation between 2020-2100.”

Total emissions	
NHS	25 million tonnes CO ₂ e
Primary care	5.75 million tonnes CO ₂ e

Annual deaths	
NHS	5,640
Primary care	1,300



Relationship between climate change and health

The prize...if the UK met its current climate commitments...

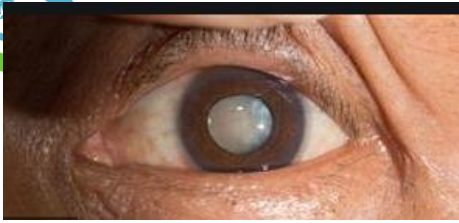
Lives saved

98,000 diet

21,500 exercise

3,500 air pollution

AND 5,640
annual
global
deaths

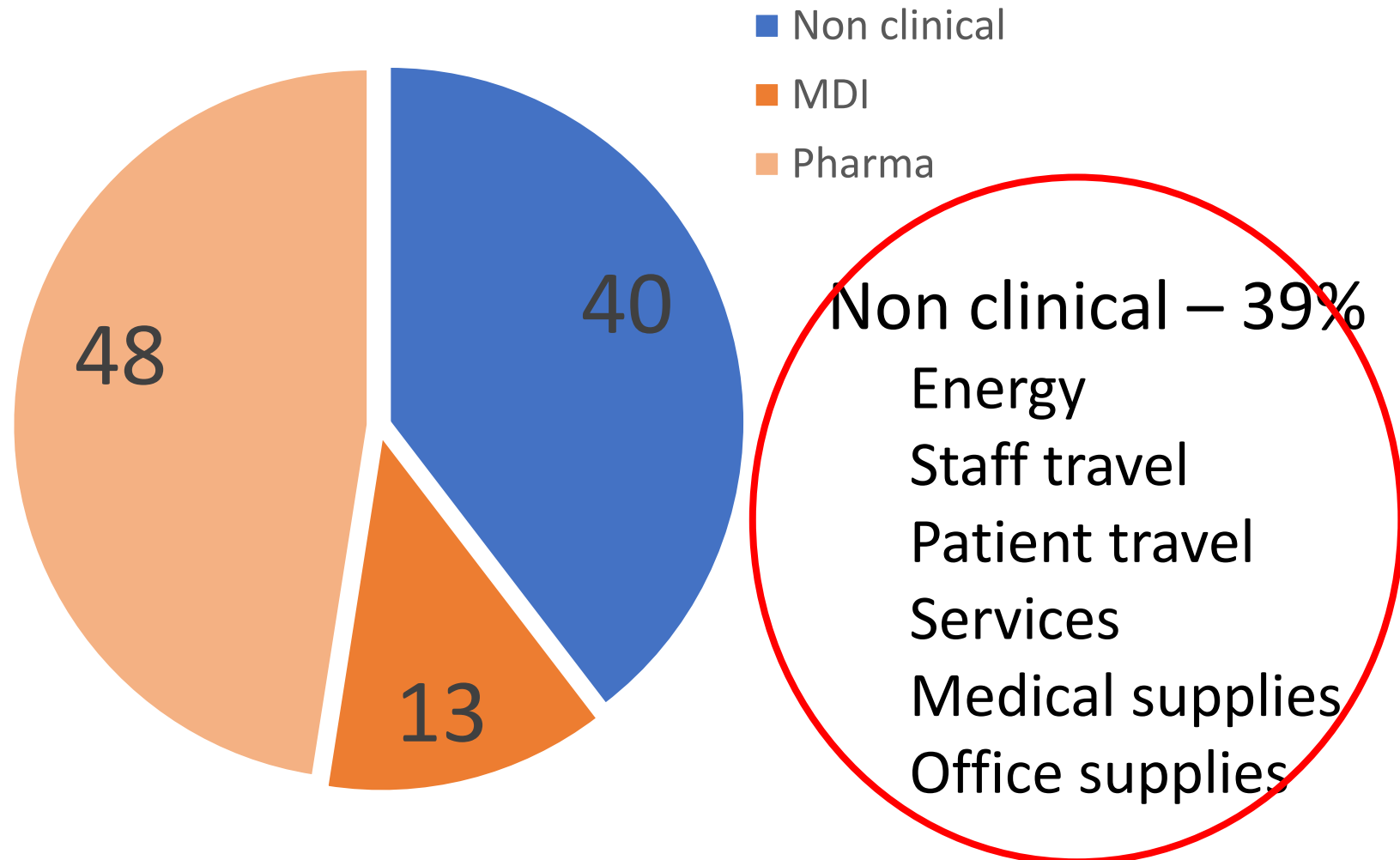


Activity	CO2e per activity	Number per year	Total emissions (kg CO2e)
Cataract operation	182kg	330,000	60 million
GP appointment	66kg	300 million	19,800 million
Ventolin inhaler	25kg	21.7 million prescriptions for salbutamol	542 million
Flu vaccine	1.7kg	7.26 million	12 million
Omeprazole (1 month)	0.45kg	31.5 million prescription	14 million



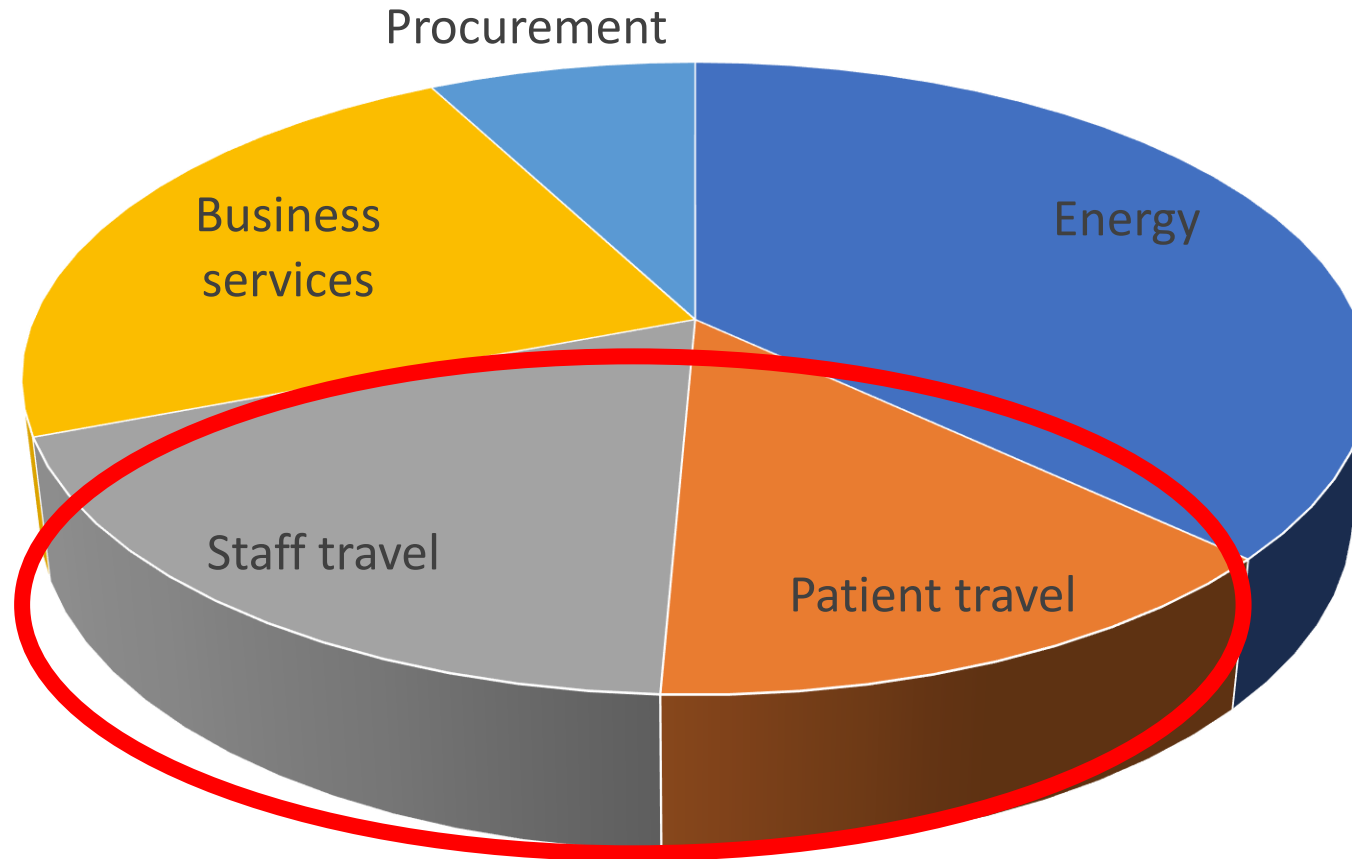
Sources of carbon in primary care

Clinical 61%	kilotonnes CO ₂ e	%
Inhalers (MDI)	767	13
Pharmaceuticals and chemicals	2,750	48





What is the footprint of running a practice?



Carbon hotspots in primary care

Summary of a
carbon footprint
pilot scheme of
urban medical
practices in
Salford

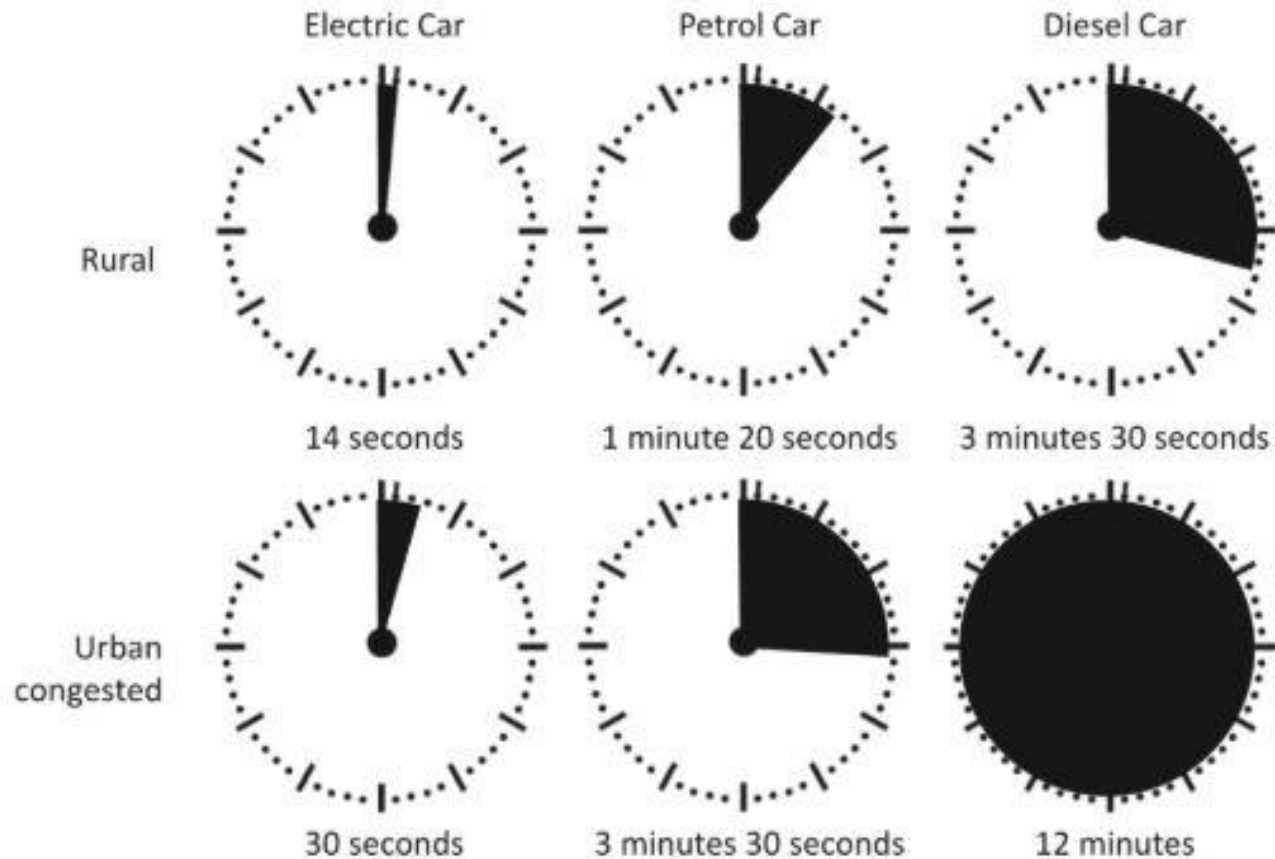
V1.1

NHS
Salford
Clinical Commissioning Group





'Co-harms' from travel



Staff travel

Cumulative 365,000 km/227,000 miles pa

= 46,000 kg CO₂e

= 1,891 days of life lost

= 5 years 66 days

Patient travel

Cumulative 250,000 km/155,000 miles pa

= 23,500 kg CO₂e

= 1,291 days of life lost

= 3 years 196 days



Public health co-benefits

Original Paper | [Open Access](#) | Published: 24 October 2020

Mental health consequences of urban air pollution: a
prospective population-based longitudinal study

Ioannis Bakas
Matthew Briggs
Stephani L. Lee

Social Psychiatry

PNAS

Proceedings of the
National Academy of Sciences
of the United States of America

Home

Articles

Front Matter

News

NEW RESEARCH IN

Physical Sciences

RESEARCH ARTICLE

The impact of exposure to air pollution on
cognitive performance

THE LANCET

ARTICLES | VOLUME 389, ISSUE 10070, P718-726, FEBRUARY 18, 2017

Living near major roads and the incidence of
disease, and multiple sclerosis: a population-based
study

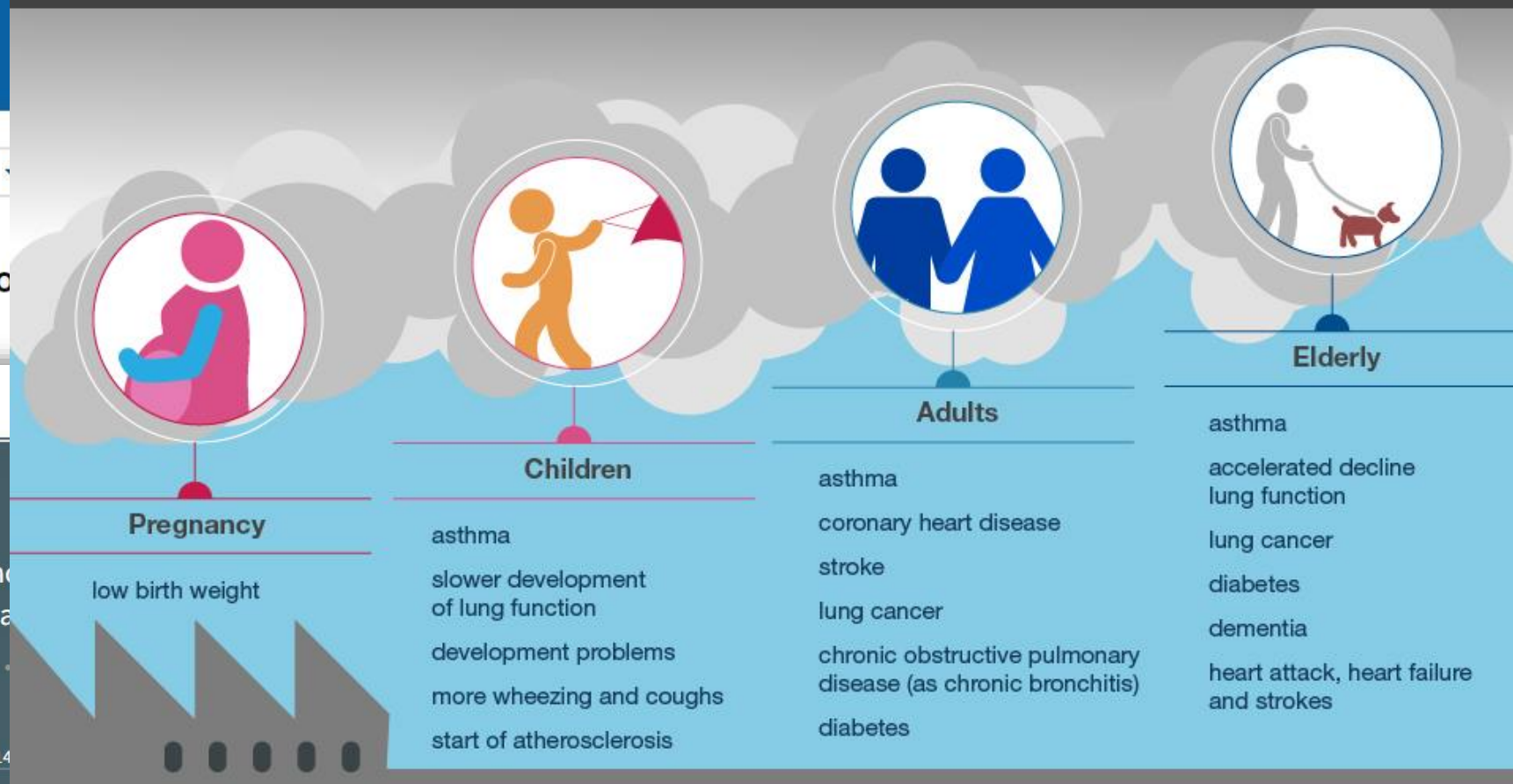
Hong Chen, PhD Jeffrey C Kwong, MD • Ray Copes, MD •
Aaron van Donkelaar, PhD • et al. [Show all authors](#)

Published: January 04, 2017 • DOI: [https://doi.org/10.1016/S0140-6736\(16\)30140-1](https://doi.org/10.1016/S0140-6736(16)30140-1)

Public Health England

Health Matters

Air pollution affects people throughout their lifetime





What can we do?



Our duty to tell patients

Adoo-Kissi-Debrah inquest:

Coroner recommends setting health-based legally-binding air quality limits to prevent future deaths from air pollution.

The coroner's final concern is that "adverse effects of air pollution on health **are not being sufficiently communicated to patients** and their carers by medical and nursing professionals".

The cost of air pollution is captured in a child's smile: it's time for 'Ella's law'
Jocelyn Cockburn and Guy Mitchell

As the family lawyers at Ella Aduo-Kissi-Debrah's inquest, we join her mother and the coroner in calling for changes to the environment bill



▲ Ella Aduo-Kissi-Debrah died in 2013. Her death certificate is the first to recognise air pollution as a cause of death. Photo credit: Paul Hirst/PA



Taking action

1. Become aware
Carbon literacy training
2. “Know your number”
Carbon footprint of practices

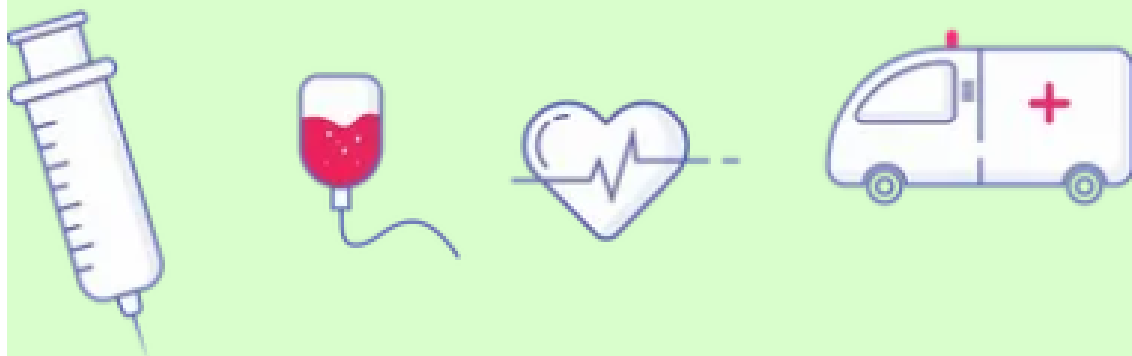


3. Turn intention into action –
Have a plan
4. Declare a climate emergency



Carbon literacy

Online carbon literacy
training for healthcare



SEE Sustainability

seesustainability.co.uk

UKHACC

www.ukhealthalliance.org/carbon-literacy-guide

Centre for Sustainable Healthcare


sustainablehealthcare.org.uk/courses/introduction-sustainable-healthcare

The Carbon Literacy Project carbonliteracy.com



Know your number

Carbon footprint of practices

GP Carbon Calculator [See Sustainability](#)

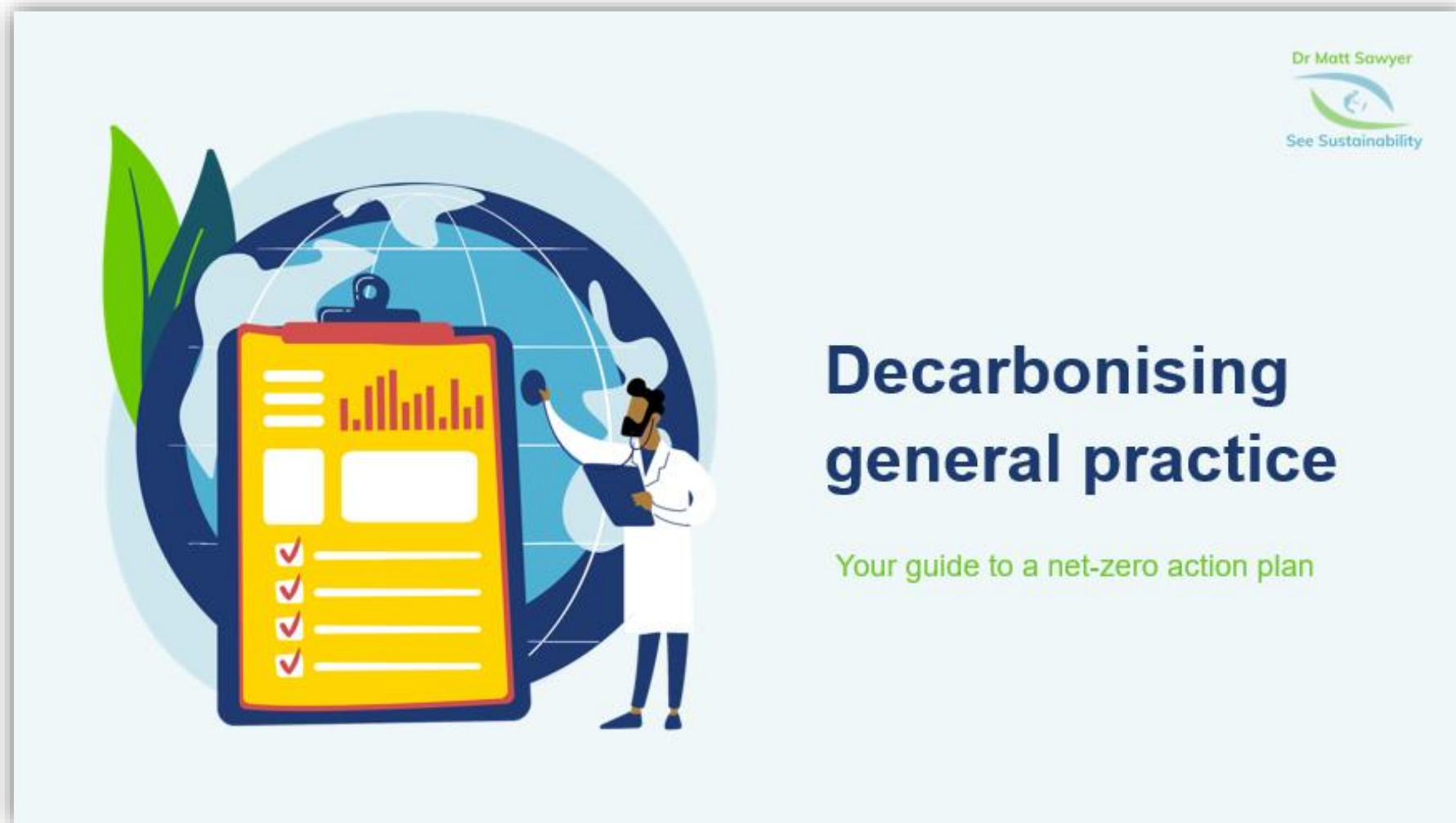
Primary care carbon calculator

A practical calculator for primary care

[Start Calculation >](#)



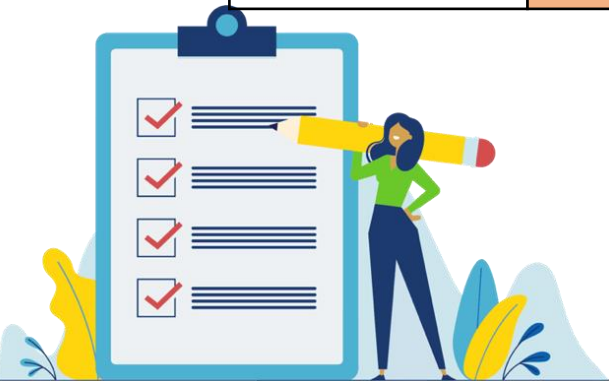
Have a plan





Practice 'Net-Zero Action Plan' - deliver

Area	Current footprint (2021)	Aim/target					
		3 years time		6 years time		9 years time	
		% reduction	How	% reduction	How	% reduction	How
Energy – electricity							
Gas							
Travel – staff							
Travel – patient							
Business services							
Procurement – Medical							
Procurement – Office							
Total							





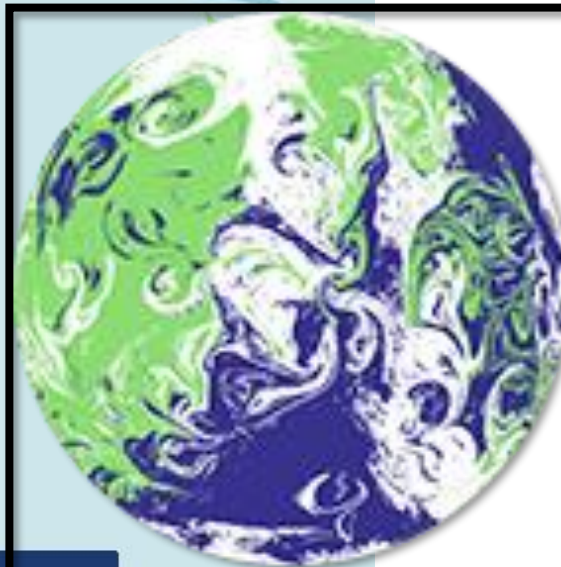
Declare a climate emergency



Climate emergency declaration

A guide for primary care

Dr Matt Sawyer



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY

seesustainability.co.uk/green-plan



Do something today

**HEALTH
DECLARES**  **Climate &
Ecological
Emergency**

**Carbon Literacy
Project**



1. Carbon literacy training
2. Carbon footprint your practice



3. Turn intention into action – *Have a plan*
4. Declare a climate emergency



seesustainability.co.uk
info@seesustainability.co.uk