



# Overcoming the climate crisis with environmentally sustainable primary care

London Greener Primary Care Week

Dr Matt Sawyer

SEE Sustainability

Tue 14<sup>th</sup> May 2024

# Is there a critical illness affecting primary care?

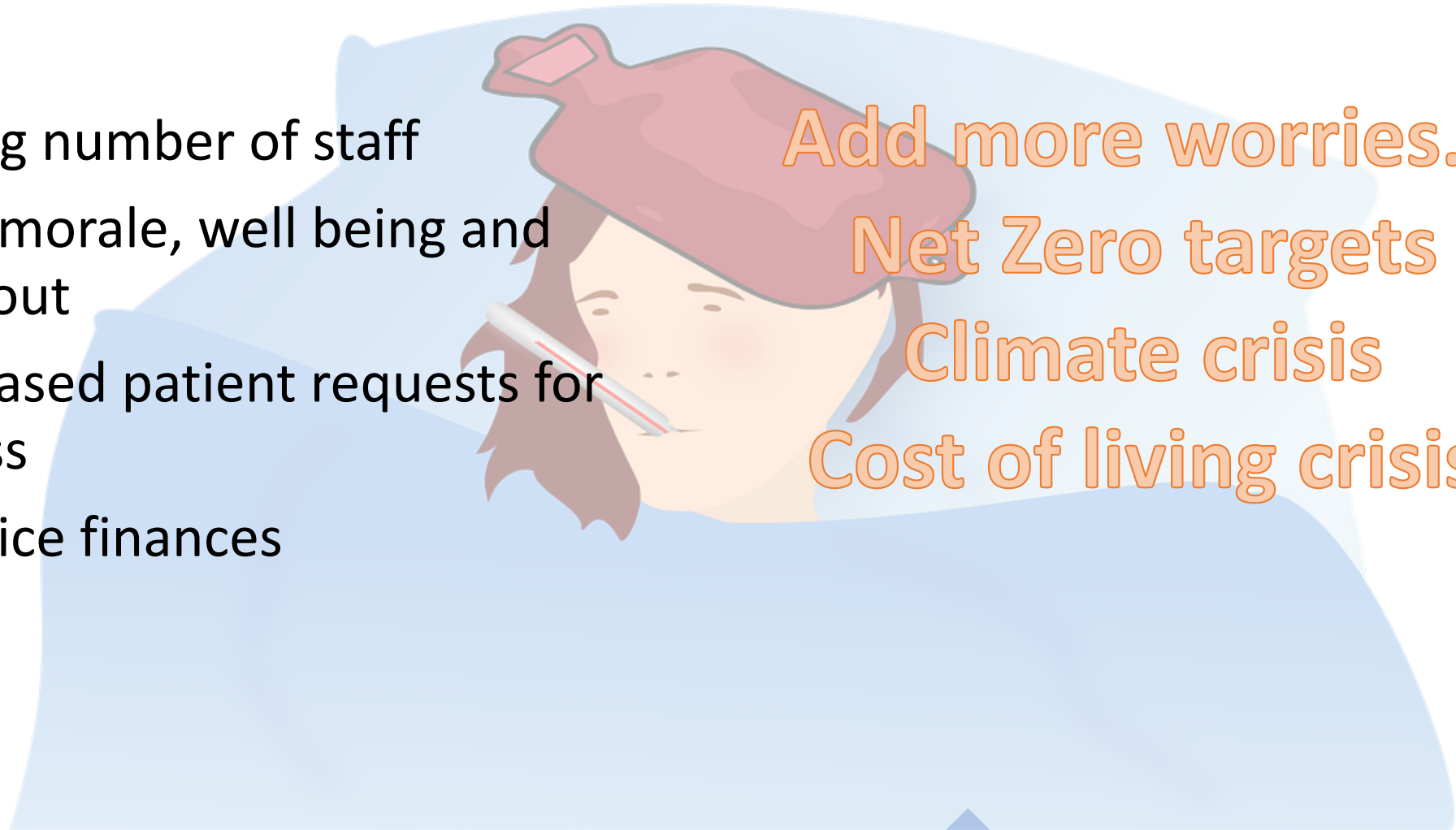
- ❖ Falling number of staff
- ❖ Staff morale, well being and burnout
- ❖ Increased patient requests for access
- ❖ Practice finances

Add more worries...

Net Zero targets

Climate crisis

Cost of living crisis





Is there a cure?

Yes, there is...



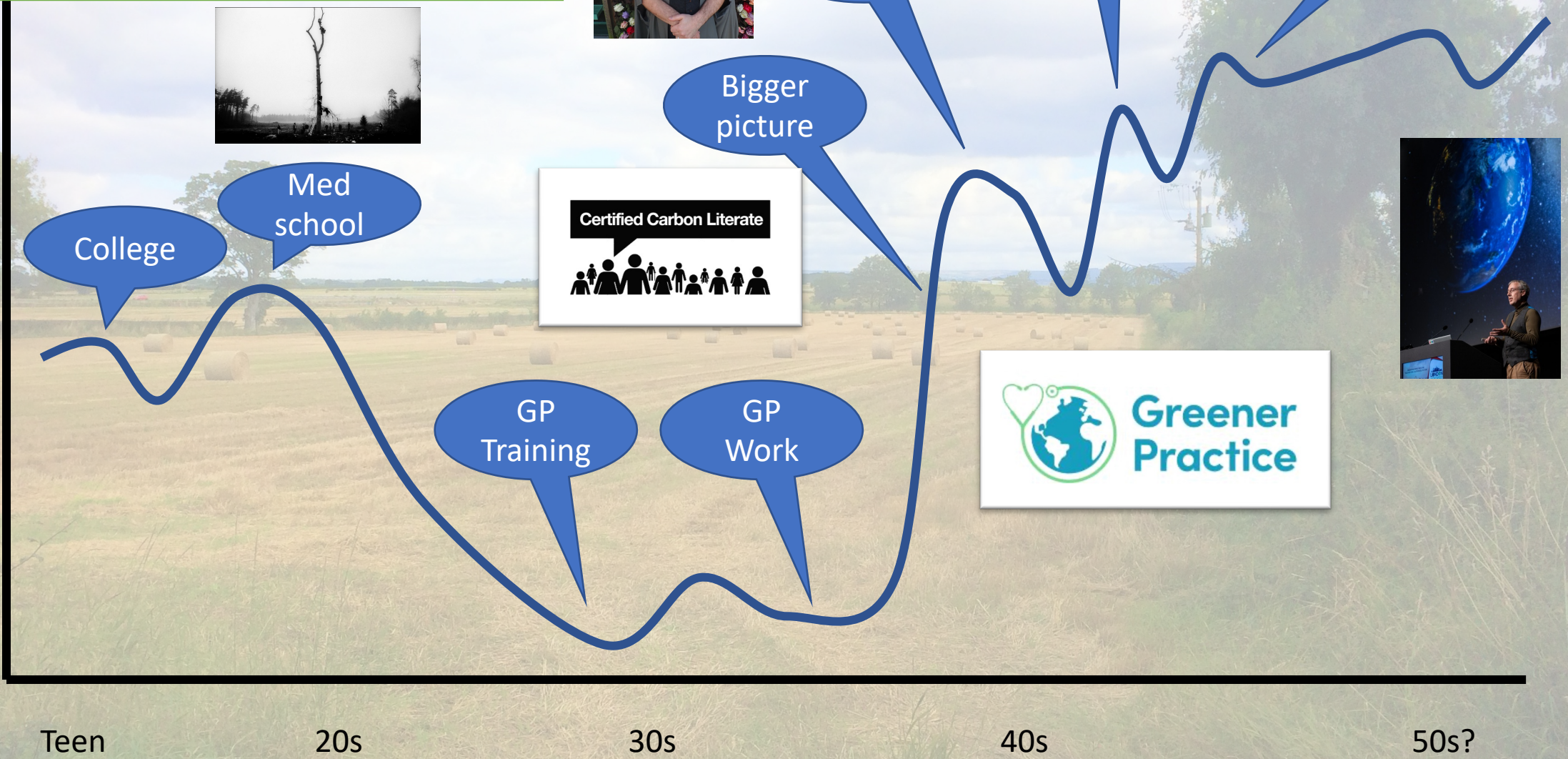
# BETTER FOR...

- Practice finances
- Practice staff
- Patients and health
- Planet





# My environmental motivation curve





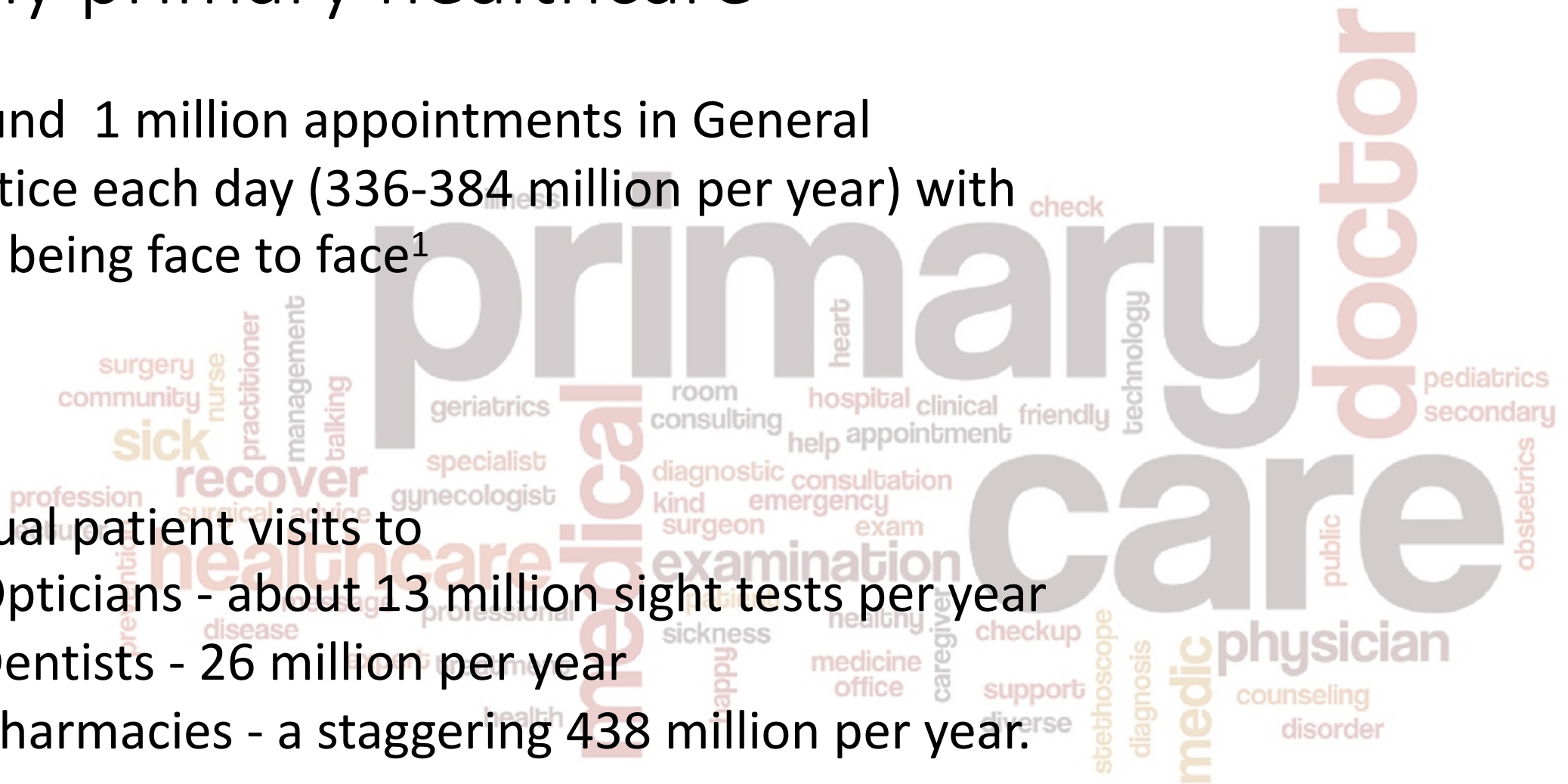
# Why primary healthcare

Around 1 million appointments in General Practice each day (336-384 million per year) with 70% being face to face<sup>1</sup>

Annual patient visits to

- Opticians - about 13 million sight tests per year
- Dentists - 26 million per year
- Pharmacies - a staggering 438 million per year.

<sup>1</sup> [www.health.org.uk/news-and-comment/charts-and-infographics/general-practice-tracker](http://www.health.org.uk/news-and-comment/charts-and-infographics/general-practice-tracker)





What can we do?

Baseline

Prioritise

Actions

Motivate

Enthuse

Inspire

Enable



# Greenhouse gas emissions from general practice

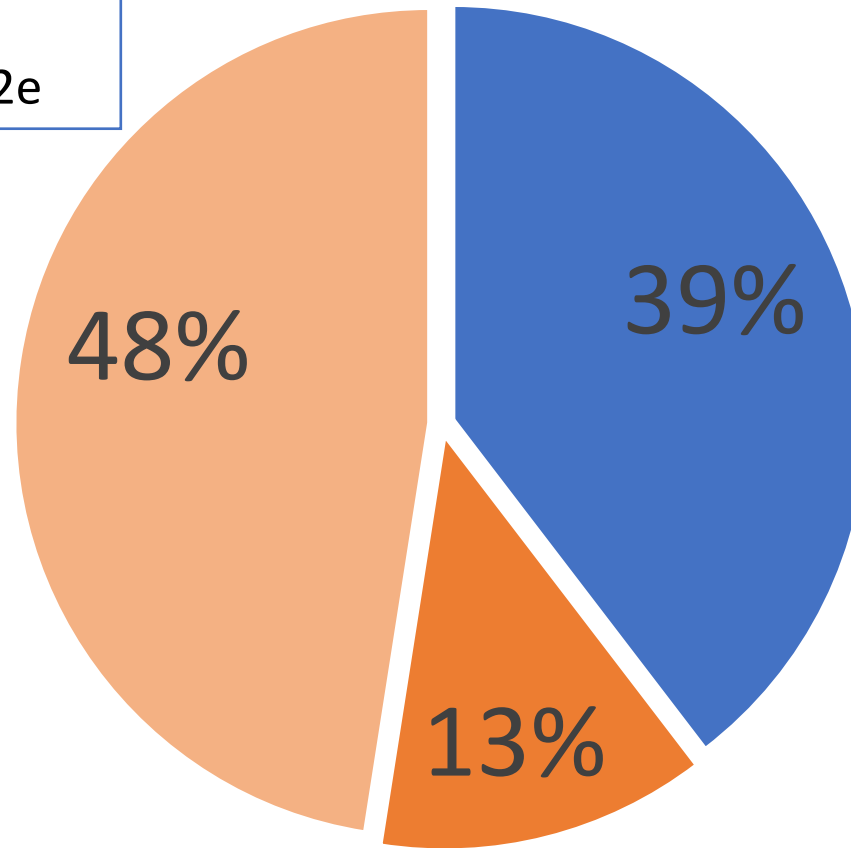
## Total emissions

NHS	25 million tonnes CO <sub>2</sub> e
Primary care	5.75 million tonnes CO <sub>2</sub> e

## Clinical - 61%

Pharmaceuticals and chemicals 48%

Inhalers (MDI) 13%



- Non clinical
- MDI
- Pharma

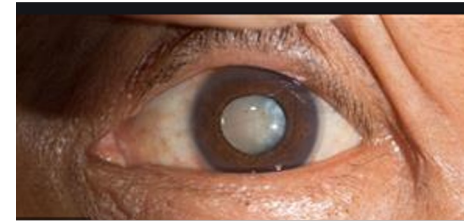
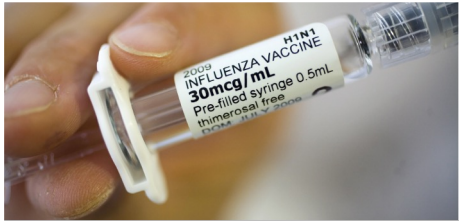
## Non-clinical - 39%

Energy  
Staff travel  
Patient travel  
Services  
Medical supplies  
Office supplies





# The Carbon Footprint of Medical Things



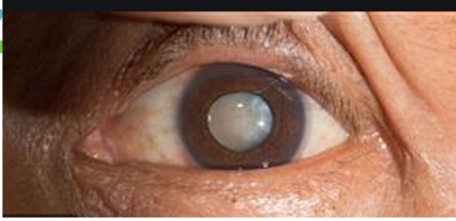
<b>Flu vaccine</b>	<b>One month of omeprazole</b>	<b>Ventolin Evohaler</b>	<b>Cataract operation</b>	<b>GP appointment</b>
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**Which emission with which item?**

<b>66 kg</b>	<b>182 kg</b>	<b>0.45 kg</b>	<b>1.5 kg</b>	<b>25 kg</b>
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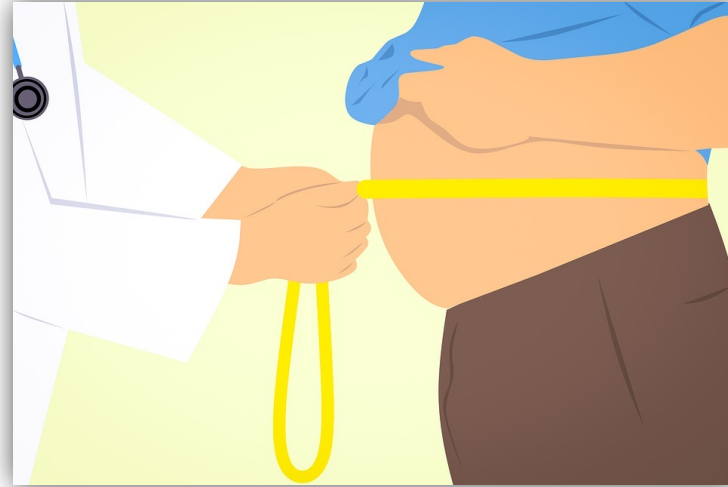
Activity	CO2e per activity	Number per year	Total emissions (kg CO2e)
Cataract operation	182kg	330,000	60 million
GP appointment	66kg	300 million	19,800 million
Ventolin inhaler	25kg	21.7 million prescriptions for salbutamol	542 million
Flu vaccine	1.5kg	10 million	15 million
Omeprazole (1 month)	0.45kg	31.5 million prescription	14 million






If you can't  
measure it,  
you can't  
improve it

[www.gpcarbon.org](http://www.gpcarbon.org)




**GP Carbon Calculator**  See Sustainability


**General practice non-clinical carbon calculator**

A practical calculator for general practices

[Start Calculation >](#)

In association with

 **Boehringer Ingelheim**

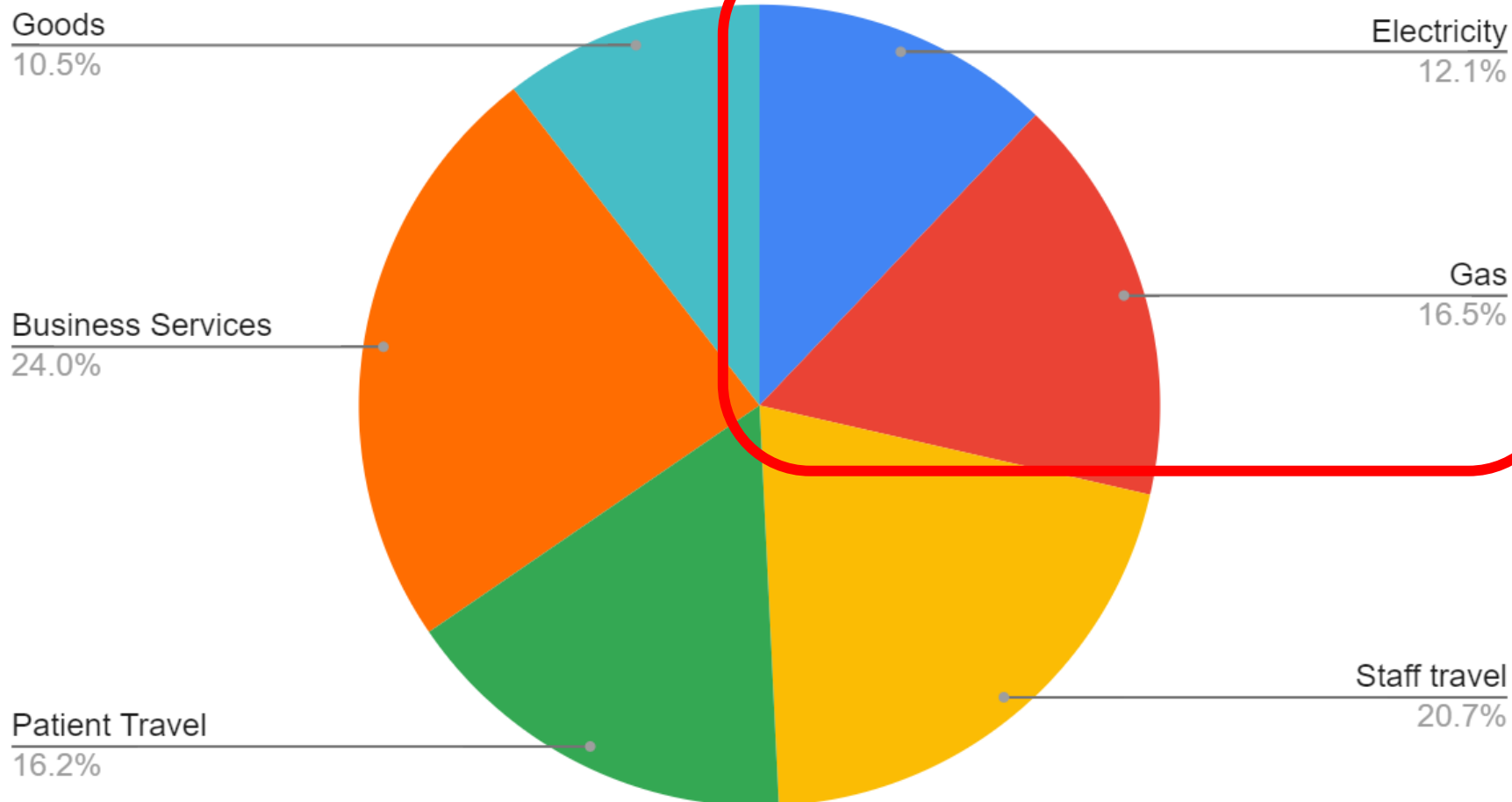
 **Sustainable Healthcare Coalition**



# What is the footprint of running a GP practice?



Average practice emissions for 9,200 patients





# What uses energy

Write everything down

What uses most?

Heating and cooling

Space and water

## ENERGY

Baseline

Air con

Heating

Lighting

Computers

Fridges

Medical kit

Kitchen appliances

Oxygen

Phones

Cademics — engines  
water pumps

Car pool

Recycling paper

refuse

Lifts!

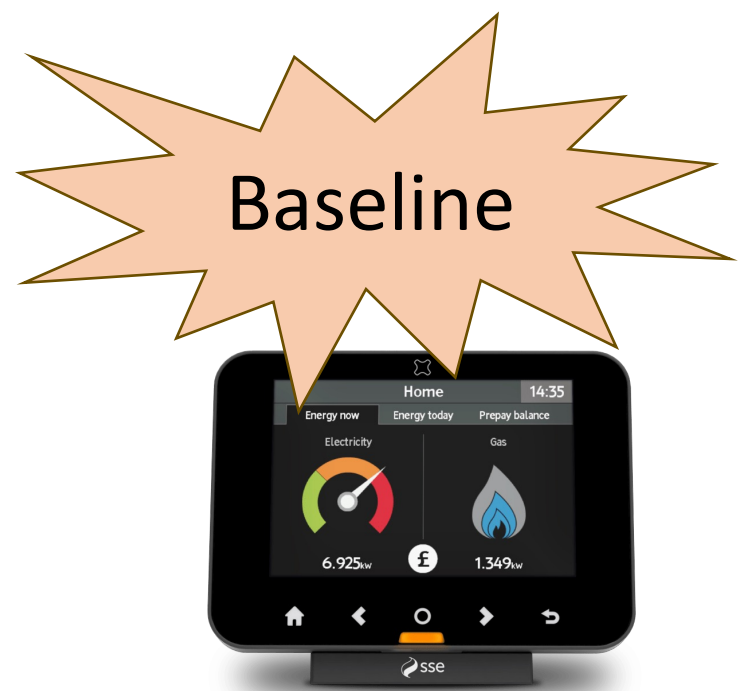
**HOT WATER**

TVS - Waiting rooms

Desks



# Projects on energy



## 1. Measure

	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed
Date	20/12	21/12	22/12	23/12	24/12	25/12	26/12	27/12	28/12	29/12	30/12
kWh	403	964	972	943	827	561	451	360	585	903	970

## 2. Make every kWh count and reduce demand



# Four step approach to decarbonise the NHS estate

**STEP 1** Make every kWh count

LED lighting 376 ktCO <sub>2</sub> e	Small appliances 8 ktCO <sub>2</sub> e
Building Management Systems 352 ktCO <sub>2</sub> e	Carbon and energy management 756 ktCO <sub>2</sub> e
Air conditioning and cooling 21 ktCO <sub>2</sub> e	Building services distribution systems 31 ktCO <sub>2</sub> e
Ventilation 80 ktCO <sub>2</sub> e	
Space heating 118 ktCO <sub>2</sub> e	
Digitalisation 15 ktCO <sub>2</sub> e	

**Investment needed £1,322m**  
**Saving £346m pa**  
**Carbon saving 1,757 ktCO<sub>2</sub>e**

**STEP 4** Increase on-site renewables

PV installation 278 ktCO <sub>2</sub> e	<b>Investment needed £1,936m</b> <b>Saving £131m pa</b> <b>Carbon saving 278 ktCO<sub>2</sub>e</b>
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**STEP 2** Prioritise

Building Fabric 114 ktCO <sub>2</sub> e	<b>Investment needed £326m</b> <b>Saving £15m pa</b> <b>Carbon saving 114 ktCO<sub>2</sub>e</b>
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**STEP 3** Switch to non-fossil fuel heating

Coal boiler removal 3 ktCO <sub>2</sub> e	Hot water 55 ktCO <sub>2</sub> e
Oil boiler removal 7 ktCO <sub>2</sub> e	
Heat pumps and hydrogen CHP 454 ktCO <sub>2</sub> e	

**Investment needed £1,364m**  
**Saving £ -14m pa**  
**Carbon saving 519 ktCO<sub>2</sub>e**

# Energy hierarchy

Energy audit

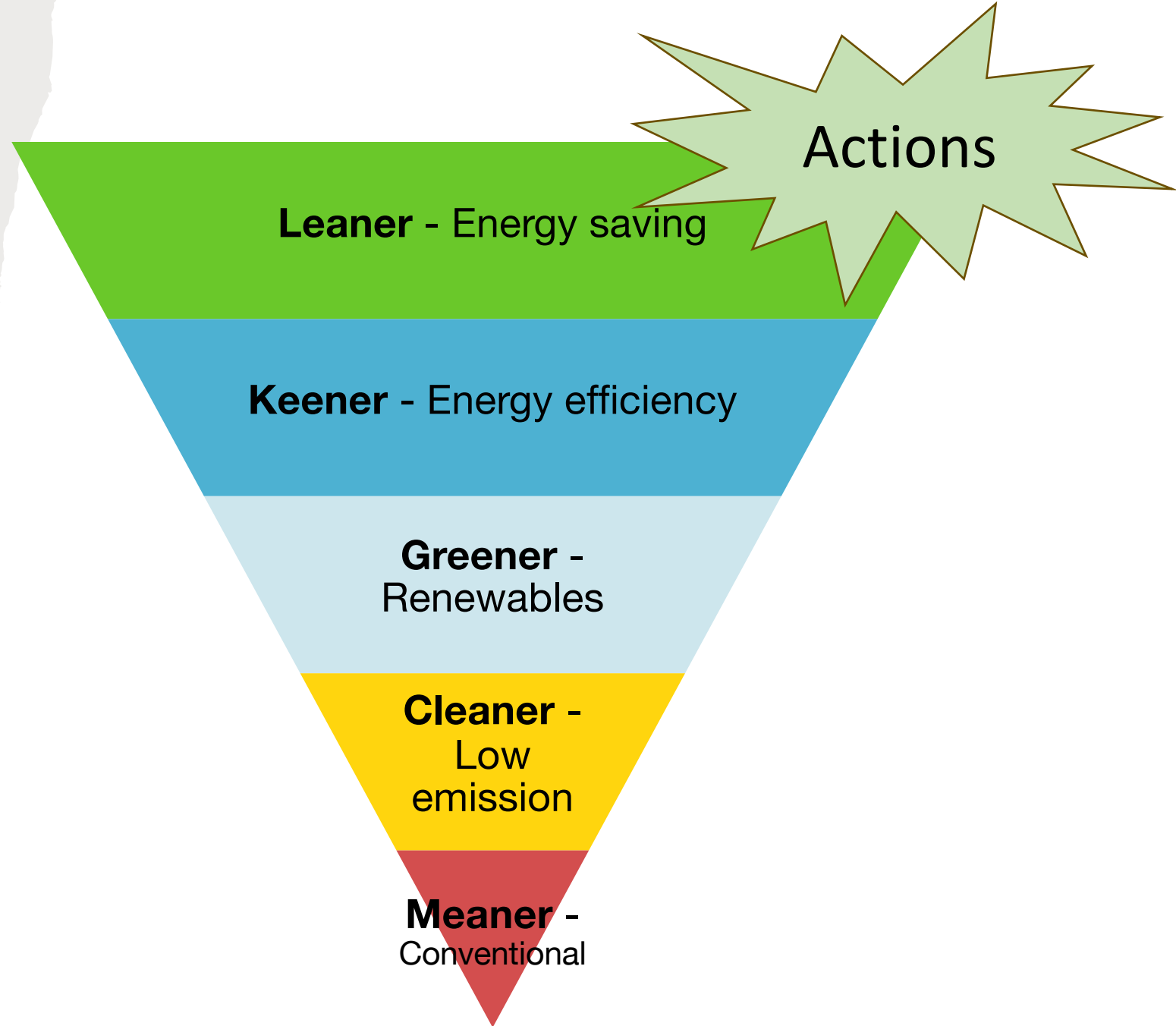
Energy reduction – ‘Make every kWh count’

Behaviour change

- ‘Electricity responsibility plan’

Tech

- Kill switches
- Light sensors
- LED bulbs





# Co-benefits to easing financial pressures - energy

Problem  
High energy bills

Actions  
Reduce bills

Reduce use

Assess baseline use

Energy efficiency

'Normal is off'

Greener energy production

Building fabric

Self generation

More biodiversity

Off setting bills

Actions

Outcomes  
Planet

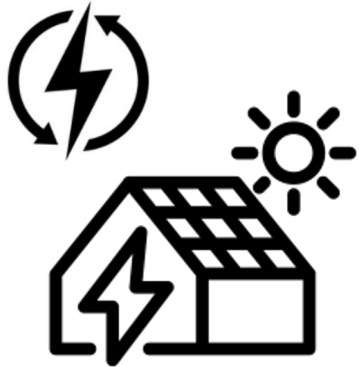
Less emissions

Outcomes  
Practice

Lower bills



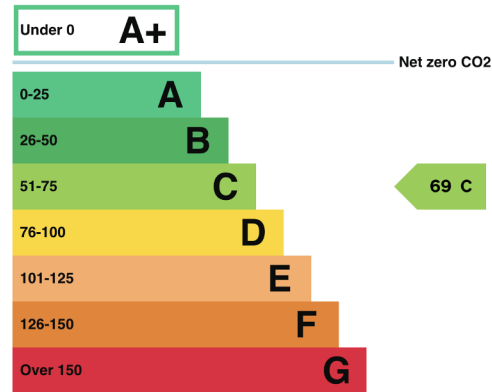
# Energy – Utopia



Energy  
Efficiency  
and use

## Energy rating and score

This property's current energy rating is C.



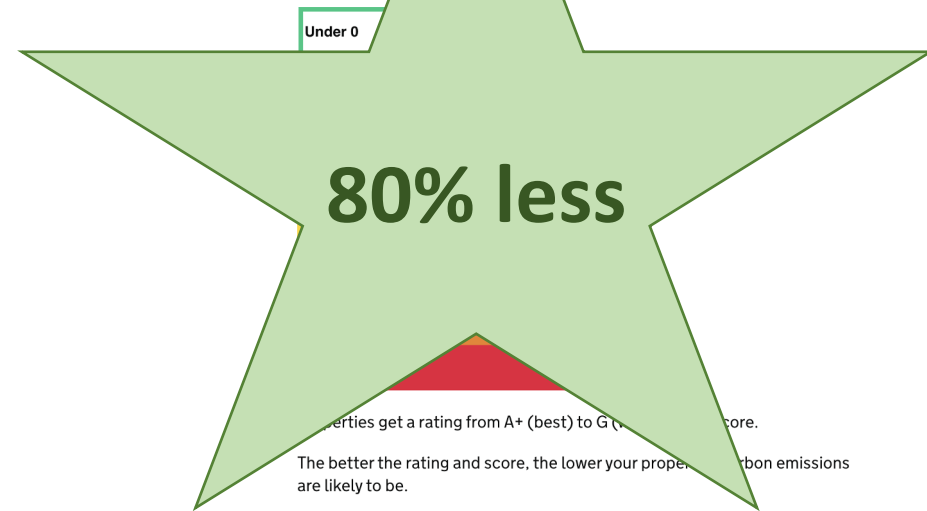
Properties get a rating from A+ (best) to G (worst) and a score.

The better the rating and score, the lower your property's carbon emissions are likely to be.

Rosebank's energy usage is **c. 448 kWh / yr.**

## Energy rating and score

This property's current energy rating is A.



Properties get a rating from A+ (best) to G (worst) and a score.

The better the rating and score, the lower your property's carbon emissions are likely to be.

Foleshill's energy usage is **c. 93 kWh / year.**

**Foleshill Health Centre** is the greenest healthcare practice in the country – meeting Passivhaus certification for its energy efficiency.

<https://find-energy-certificate.service.gov.uk/energy-certificate/1867-1300-0194-5838-9100>

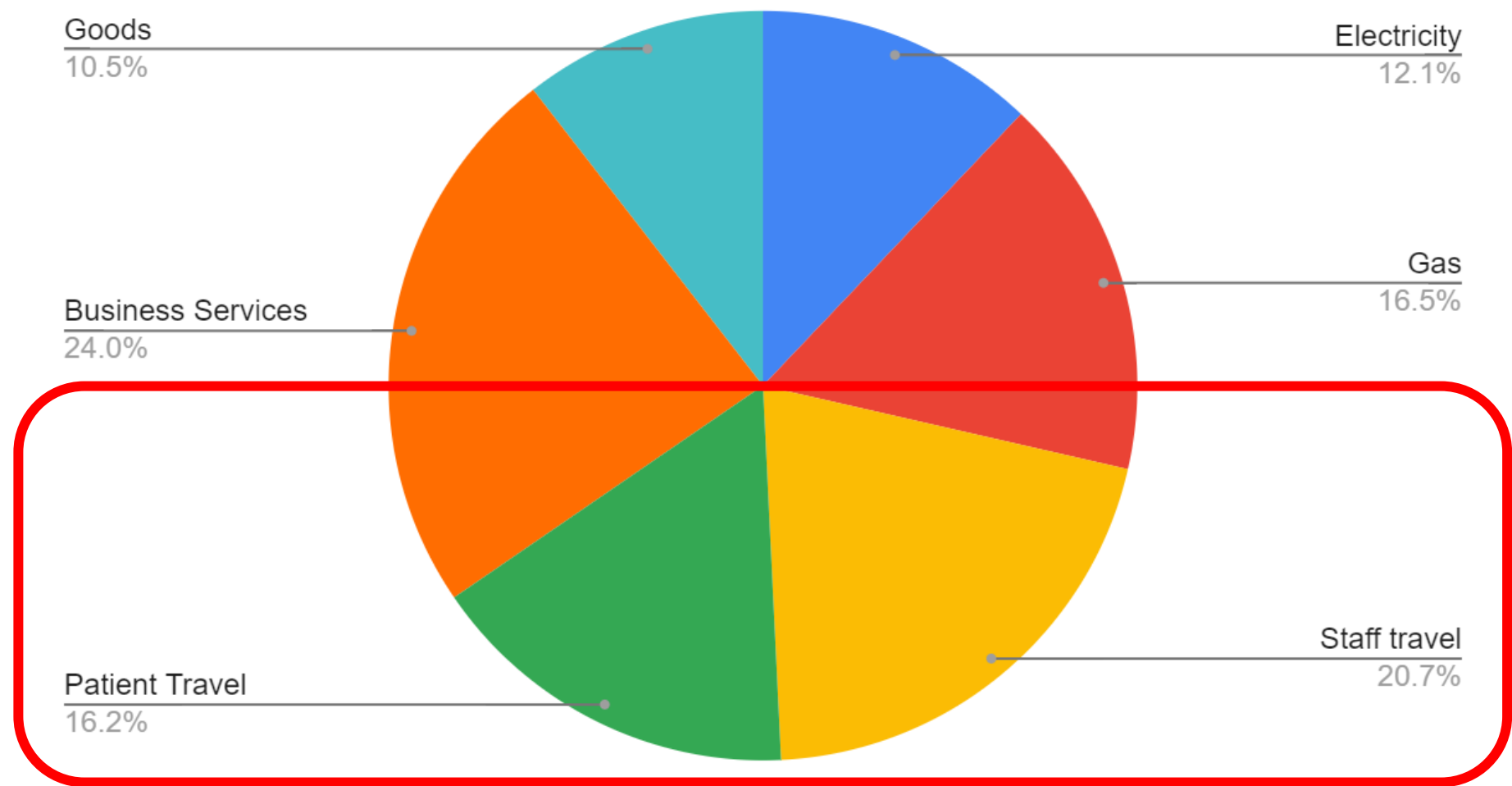
<https://communityhealthpartnerships.co.uk/news/passivhaus-certification-for-foleshill-health-centre-the-uks-greenest-healthcare-building/>



# What is the footprint of running a GP practice?

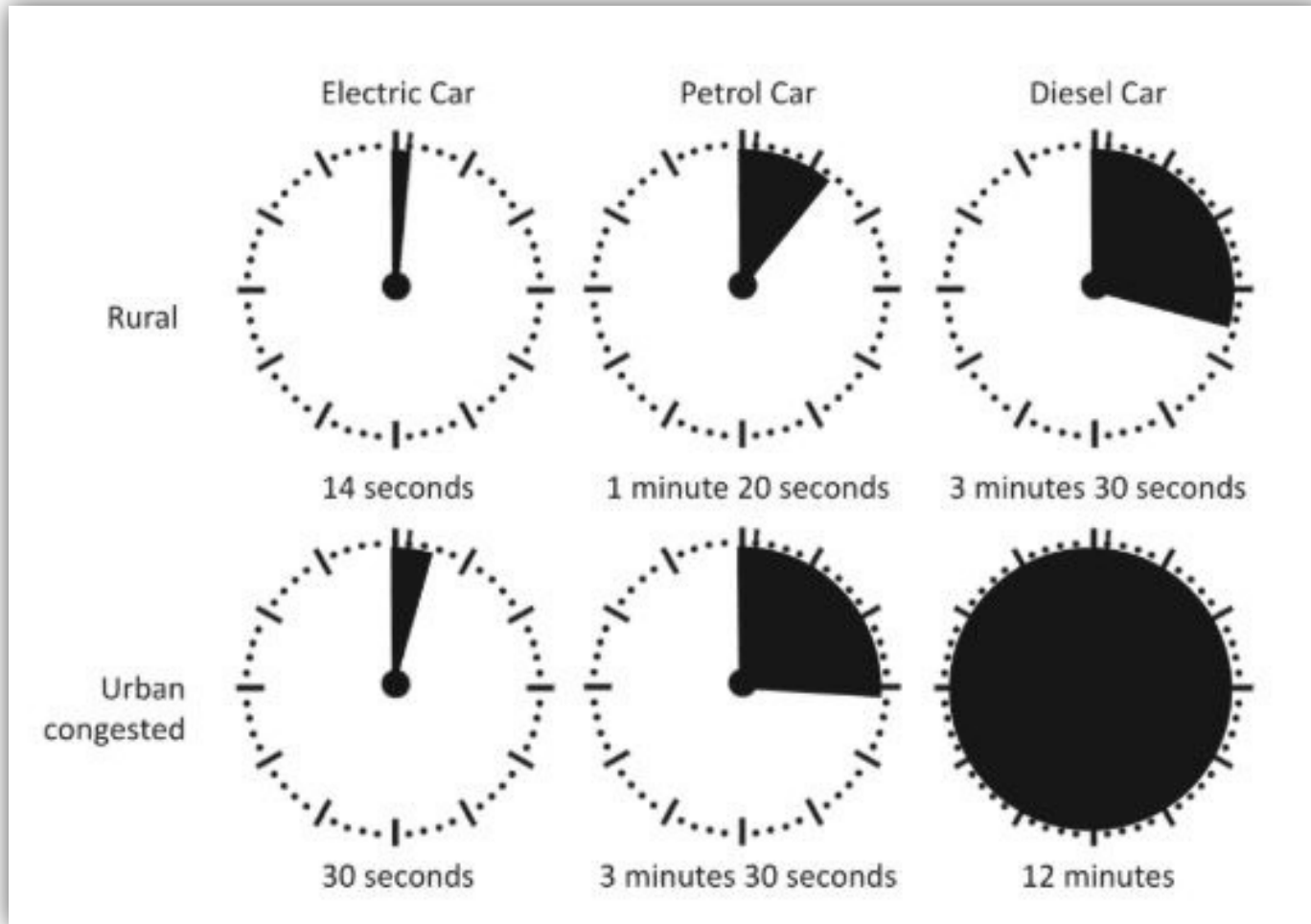


Average practice emissions for 9,200 patients





# 'Co-harms' from travel



## Staff travel

Cumulative 365,000 km/227,000 miles pa

= 46,000 kg CO<sub>2</sub>e

= **1,891 days of life lost**

= 5 years 66 days

## Patient travel

Cumulative 250,000 km/155,000 miles pa

= 23,500 kg CO<sub>2</sub>e

= **1,291 days of life lost**

= 3 years 196 days



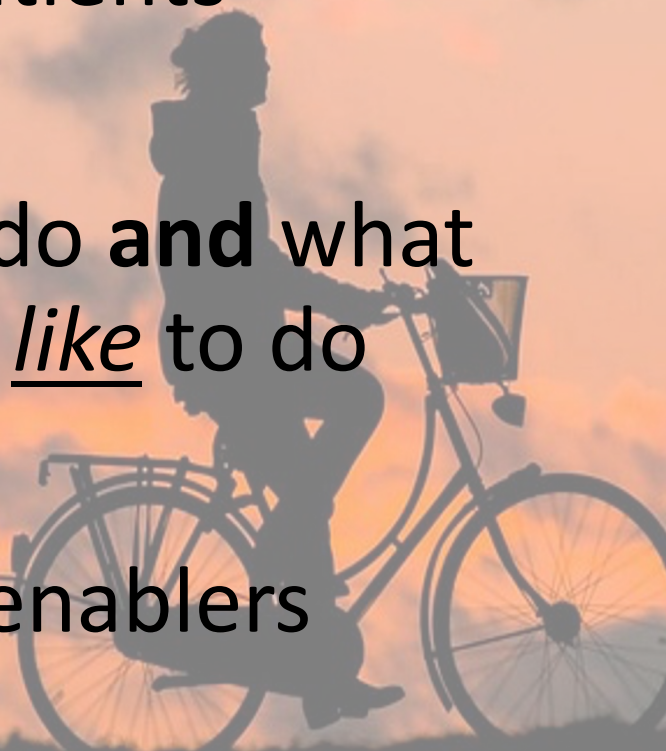
# How to make a start?

Ask your staff

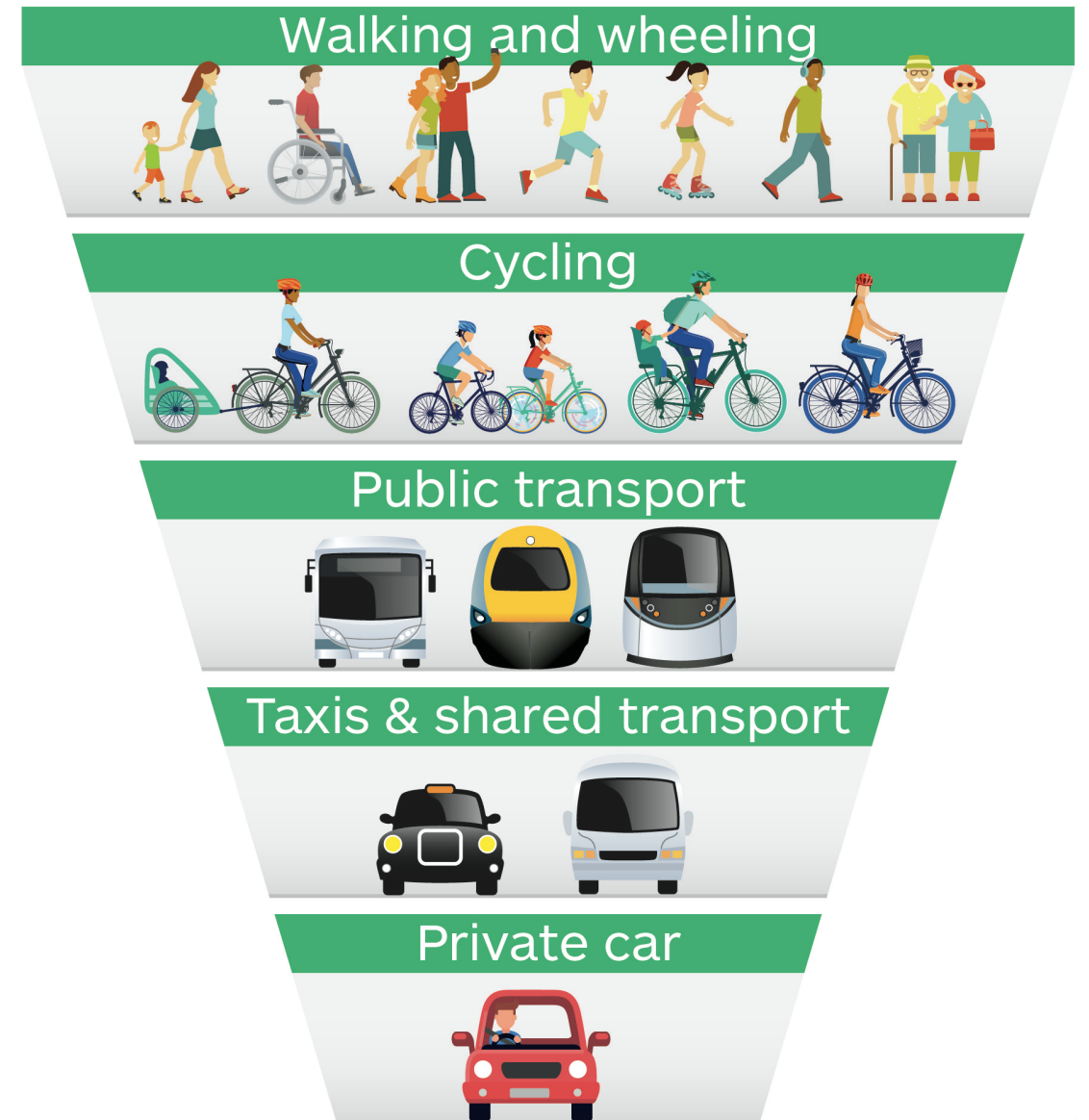
Ask your patients

What they do **and** what they would like to do

Talk about enablers



## Prioritising Sustainable Transport





# Travel - staff

Baseline

	Percentage of staff (%)			
	Less than a mile	Under 5 miles	5-10 miles	Over 10 miles
Admin	10	49	18	22
Doctor	20	34	22	24
Management	16	20	24	40
Nurse and other clinical roles	5	47	21	26

1 mile = 275g CO<sub>2</sub>e  
100 miles = 27.5kg  
10,000 miles = 2,750 kg

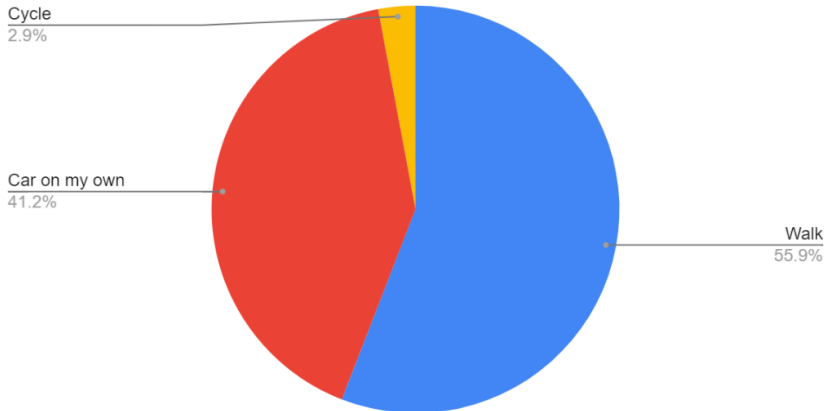


# Travel - staff

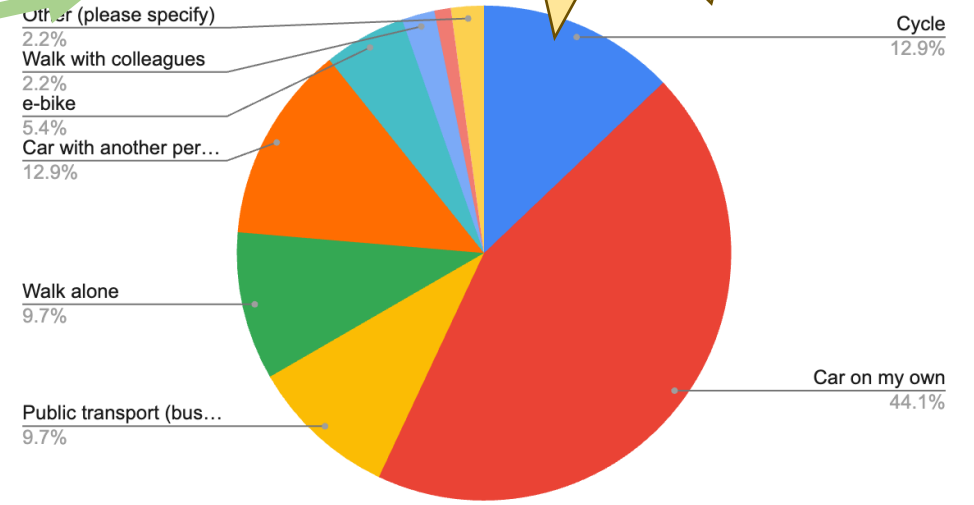


	Percentage of staff (%)			
	Less than a mile	Under 5 miles	5-10 miles	Over 10 miles
Admin	10	49	18	22
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Management	16	20	24	40
Nurse and other role	5	47	21	27

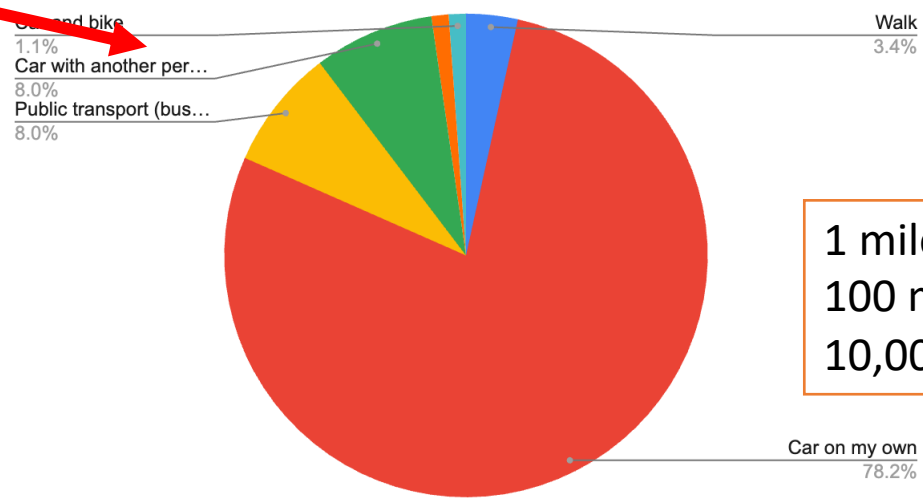
Count of What is your main transport to work currently (ie majority of journeys to the work place)?



On a perfect day how would you like to travel to work?



Travel 5-10 miles



1 mile = 275g CO<sub>2</sub>e  
 100 miles = 27.5kg  
 10,000 miles = 2,750 kg



# Co-benefits of active travel

- Better patient physical health
- Better patient mental health
- Lower health care costs – mental and physical
- Less expenditure on fuel
- Better air quality

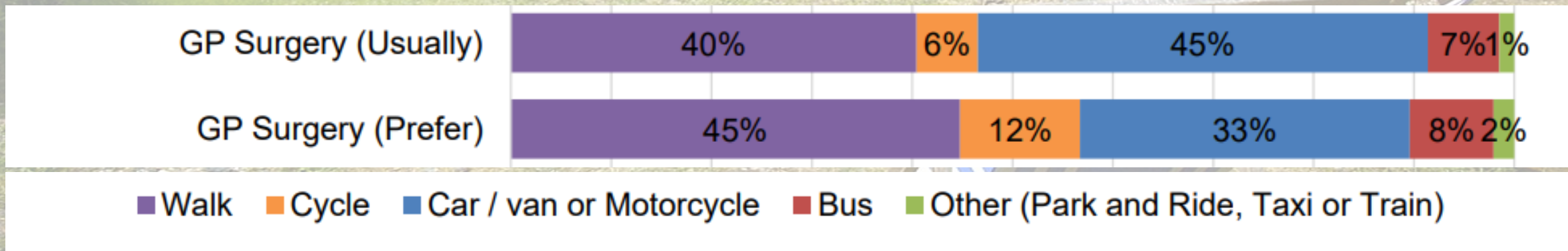




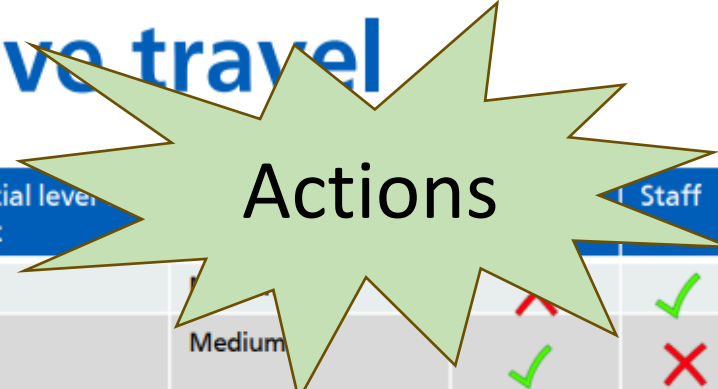


# Travel - patients

Baseline



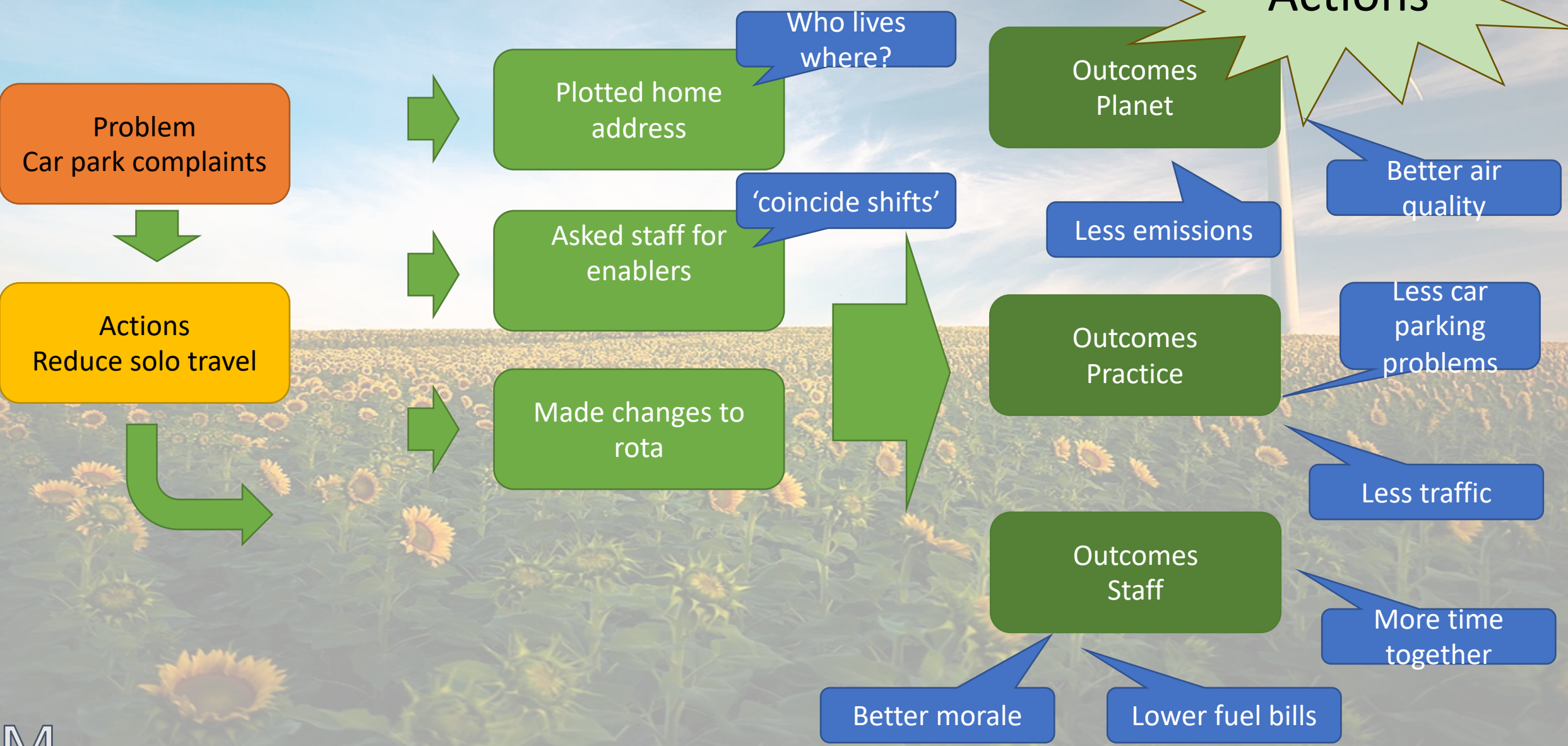
# Example of activities to promote active travel



Proposed measure	Description	Potential level of impact	Staff		
Staff Cycle Parking	Provision of long term secure and covered cycle parking and shower facilities	High			✓
Patient Cycle Parking	Provision of short term cycle parking conveniently located and accessible with the potential to secure bikes using self provided locks	High	Medium	✓	✗
Cycle to work scheme	Providing staff with a loan to purchase bicycles at a discounted cost	High	Medium	✗	✓
Public Transport Route Maps and Timetables	Making timetables and route maps for buses and trains available on the surgeries website and by providing relevant links	High	Low	✓	✓
Public Transport Season Loans	Travel loans to be offered to interested staff while raising staff awareness of the financial benefits that can be achieved using public transport	High	Medium	✗	✓
Walking and Public Transport Map	Distribution of tailored maps in order to increase local knowledge of the area and encouraging walking and public transport usage while reducing the perceived need to drive.	Medium	Low	✓	✓
Promotion of Walking as a Healthy Way to Travel	Raise awareness of the health benefits associated with regular walking and encouraging its uptake	Medium	Low	✓	✓
Cycle Maps	Increase local knowledge of the area encouraging cycling while reducing the perceived need to drive.	Medium	Low	✓	✓
Promotion of Cycling as a Healthy Way to Travel	Raise awareness of the health benefits associated with regular cycling and encouraging its uptake	Medium	Low	✓	✓
Promotion of Public Transport Benefits	Promotion of benefits that can be gained by public transport use	Medium	Low	✓	✓
Taxi Services	Promotion of taxi services for patients when travelling to and from the surgery	Medium	Low	✓	✗
Cycle Training	Promotion of cycle training courses through the practice website	Low	Low	✓	✓
Car Sharing Scheme	Promotion of car sharing for staff making similar journeys and who are looking to cut the financial cost or environmental impact of car use	Low	Low	✗	✓
Accessibility to the Rail network	Promotion of routes between the surgery and nearby railway stations	Variable by location	Low	✓	✓



# Co-benefits of lift sharing





## Staff travel 2020

Cumulative 365,000 km/227,000 miles pa

= 46,000 kg CO<sub>2</sub>e

= **1,891 days of life lost**

= 5 years 66 days



## Staff travel 2023

Cumulative 175,000 km/109,000 miles pa

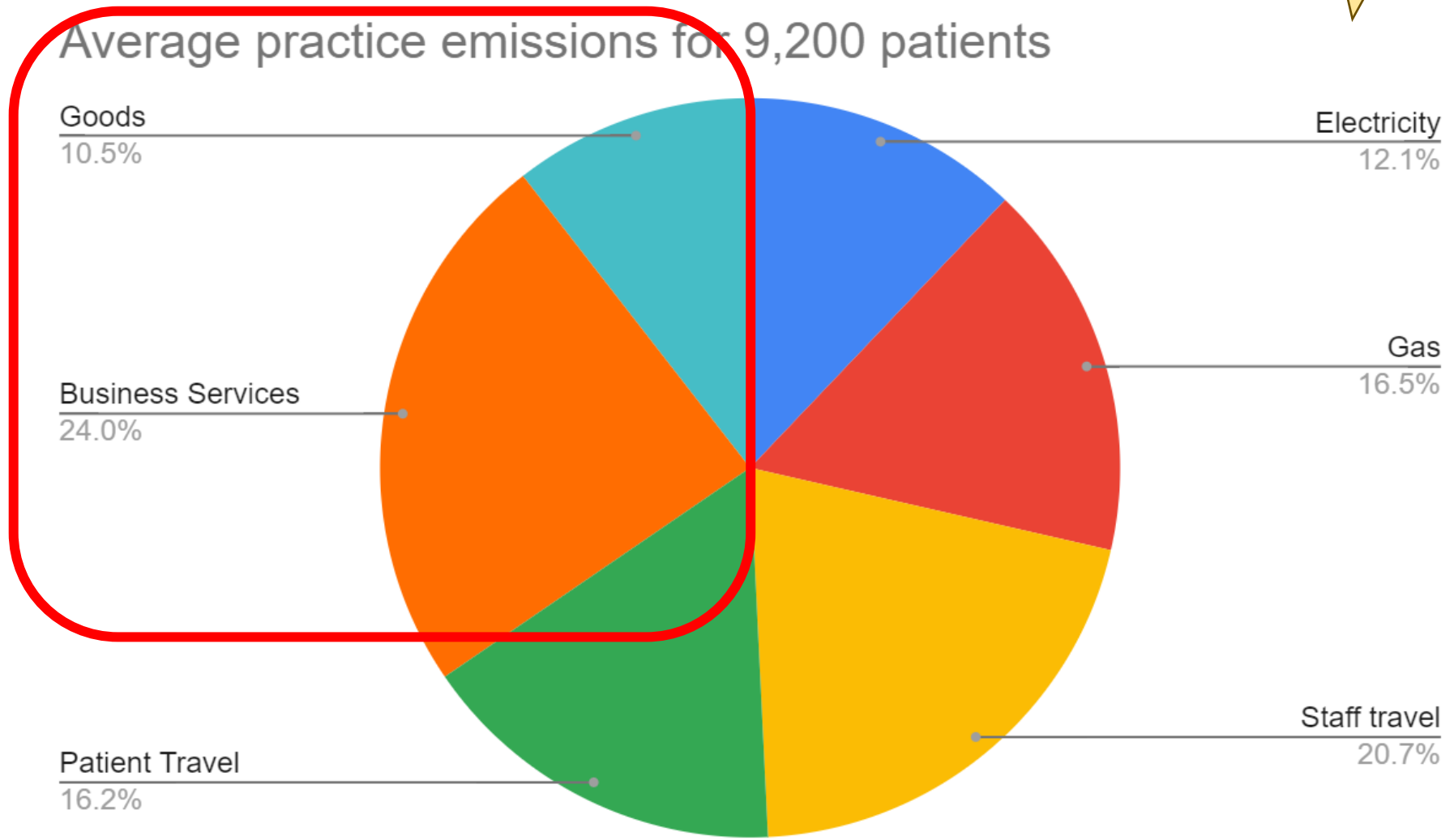
= 25,000 kg CO<sub>2</sub>e

= **1,027 days of life lost**

= 2 years 297 days



# What is the footprint of running a GP practice?





# Goods

## Procurement

- medicines stock
- Dressings
- coil kits
- gloves / PE
- couch paper
- toilet rolls
- CLEANING equipment
- minor surgery kit

Printing- ink, paper  
milk  
collections

Autoclave vs single use / speculums etc / plastics

scrubs  
office supplies  
vaccines  
tea + coffee  
computers/laptops  
furniture  
packaging  
post-its!  
stationary

## Medical equipment

## Medical consumables

- Medicine stock
- Dressings
- Coil kits
- Gloves/Personal Protective equipment
- Couch paper
- Minor surgery kit

## Office equipment

- Computer/laptops
- Furniture

## Office consumables

- Toilet rolls
- Cleaning equipment inc Bin bags
- Printing – ink, paper
- Milk, tea, coffee
- Office supplies
- Stationary (post its, pens, paper, pads)





# Medical goods - consumables



## Medical consumables

Couch light bulb

Rubber gloves

Uniform

Couch roll

Cotton wool

PV speculum

Alcogel

Soft plastic

Dressing pack

IUCD pack

Cannula

Forceps

Ear speculum

Theromscan probe covers

Projet tips

Peak flow valves

Thread retriever

Tongue depressors

Dressing/gauze

Hegar dilators

Scalpels

Instillagel

Scissors

Disposable razor KY jelly

Silver nitrate sticks

Injectables, glass vials

Liquid nitrogen

Blister packs

Out of date stock

Not being able to reuse named  
meds

Oxygen – single use

Excess local anaesthetic



# Projects on goods and services

Prioritise

- What gets used?
- What doesn't get used?
- What gets wasted?
- What ends up in the bin?
- What could be reduced?
- What could be reused?








# Actions

## Action Plan for the next year

Example table of actions

	Action	When	Who	Completed?
<b>Prescribing</b>	Review SABA inhalers and acute exacerbations	Autumn	Resp lead	
<b>Patient travel</b>	Explore cycle racks for patients, promote walking scheme	End of June	Green lead	
<b>Staff Travel</b>	Map staff homes and see if can start shifts at same time	Feb	Office Manager	
<b>Professional services</b>	Letter to accountants asking what they are doing regarding their footprint	Done	PM	Yes
<b>Gas</b>	Review loft insulation and install thicker layer	Summer	Green lead	
<b>Electricity</b>	Change energy supplier to 100% renewable	Next week	PM	Yes
<b>Medical supplies</b>	Review disposable kits used and eliminate waste by recycling all	End of August	Lead nurse	



To reach overall net zero, all parts need to reach zero

# Changing behaviours

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Barriers and enablers






- 
- **Talk to others**
  - **Tell your story**
  - **Join your tribe**
  - **Become aware**
  - **Use your voice**
  - **Do something**




katharinehayhoe

1w ...

If you are worried about climate change and want to make a difference,


 start a conversation about why climate change matters and what people can do

 join a climate action group

 consider where you keep your money

 spark ideas for change at work & school

 hold politicians accountable

 reduce your personal footprint AND make your actions contagious by talking about them

As Bill McKibben says , "the most important thing an individual can do right now is not be such an individual."

# Registered voters trust NASA, family & friends, and climate scientists most as sources of information about global warming

Rank by trust	All Registered Voters	Liberal Democrats	Moderate/Conservative Democrats	Liberal/Moderate Republicans	Conservative Republicans
1	NASA	Climate scientists	Climate scientists	NASA	Family & friends
2	Family & friends	Environmental organizations	EPA	Family & friends	Your primary care doctor
3	Climate scientists	EPA	Environmental organizations	Your primary care doctor	NASA
4	Your primary care doctor	NASA	NASA	Climate scientists	The Fox News Channel
5	EPA	Teachers	Television weather reporters	EPA	Leaders in your religious faith
6	Television weather reporters	President Biden	American Medical Association	Television weather reporters	Television weather reporters
7	Environmental organizations	National Public Radio (NPR)	President Biden	U.S. military leaders	Climate scientists
8	Teachers	Television weather reporters	Your primary care doctor	Teachers	U.S. military leaders
9	American Medical Association	Family & friends	National network news	American Medical Association	American Medical Association
10	Your local newspaper	National network news	National Public Radio (NPR)	Environmental organizations	Teachers
11	National Public Radio (NPR)	American Medical Association	Your local newspaper	Your local newspaper	Oil, gas, and coal companies
12	Local TV news	Your local newspaper	Family & friends	Local TV news	EPA
13	National network news	CNN	Local TV news	National Public Radio (NPR)	Your local newspaper
14	President Biden	Your primary care doctor	Teachers	National network news	Environmental organizations
15	U.S. military leaders	MSNBC	CNN	The Fox News Channel	Your Congressperson
16	CNN	Local TV news	MSNBC	Leaders in your religious faith	Local TV news
17	MSNBC	Your Congressperson	U.S. military leaders	Your Congressperson	National Public Radio (NPR)
18	Your Congressperson	U.S. military leaders	Your Congressperson	CNN	National network news
19	Leaders in your religious faith	Leaders in your religious faith	Leaders in your religious faith	MSNBC	CNN
20	The Fox News Channel	The Fox News Channel	Oil, gas, and coal companies	Oil, gas, and coal companies	MSNBC
21	Oil, gas, and coal companies	Oil, gas, and coal companies	The Fox News Channel	President Biden	President Biden

How much do you trust or distrust the following as a source of information about global warming?

April 2022



YALE PROGRAM ON  
Climate Change  
Communication



GEORGE MASON UNIVERSITY  
CENTER for CLIMATE CHANGE  
COMMUNICATION



# Resources



SEE Sustainability [seesustainability.co.uk](http://seesustainability.co.uk)



Greener Practice [www.greenerpractice.co.uk/](http://www.greenerpractice.co.uk/)



CPDmatch

CPD match [www.cpdmatch.co.uk](http://www.cpdmatch.co.uk)



Centre for Sustainable Healthcare [sustainablehealthcare.org.uk/](http://sustainablehealthcare.org.uk/)

Carbon Literacy  
Project

The Carbon Literacy Project [carbonliteracy.com](http://carbonliteracy.com)