

‘Why care about sustainability in Critical Care?’

People, Planet and Profit

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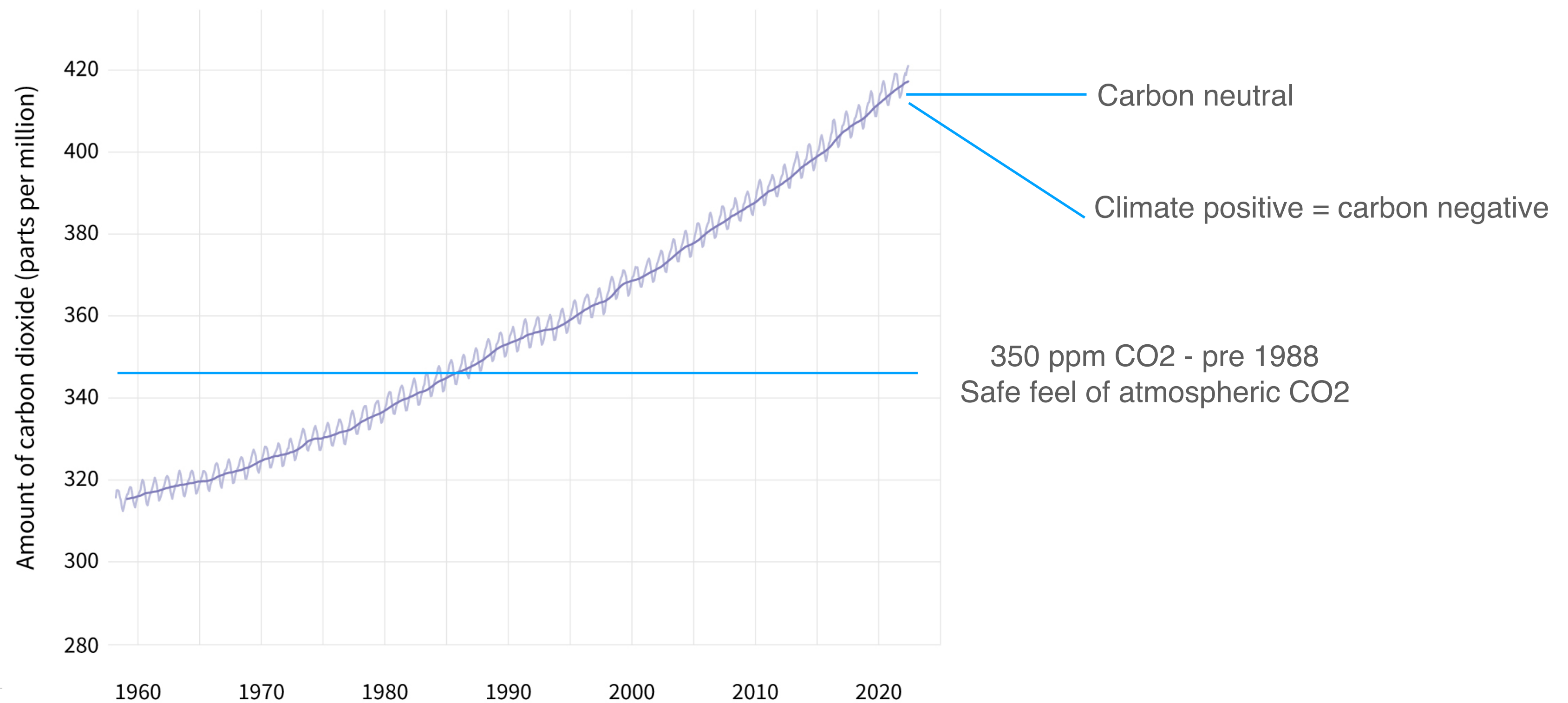
Vice Dean Faculty of Intensive Care Medicine

Why an interest in sustainability

- Other than we should all be interested
- Conflicts of Interest:
 - Personal
 - Families
 - Professional
 - Directorate
 - National

May 2022 - 421 ppm CO2

Net zero only refers to emissions (GHG) and uptake (carbon capture) being the same

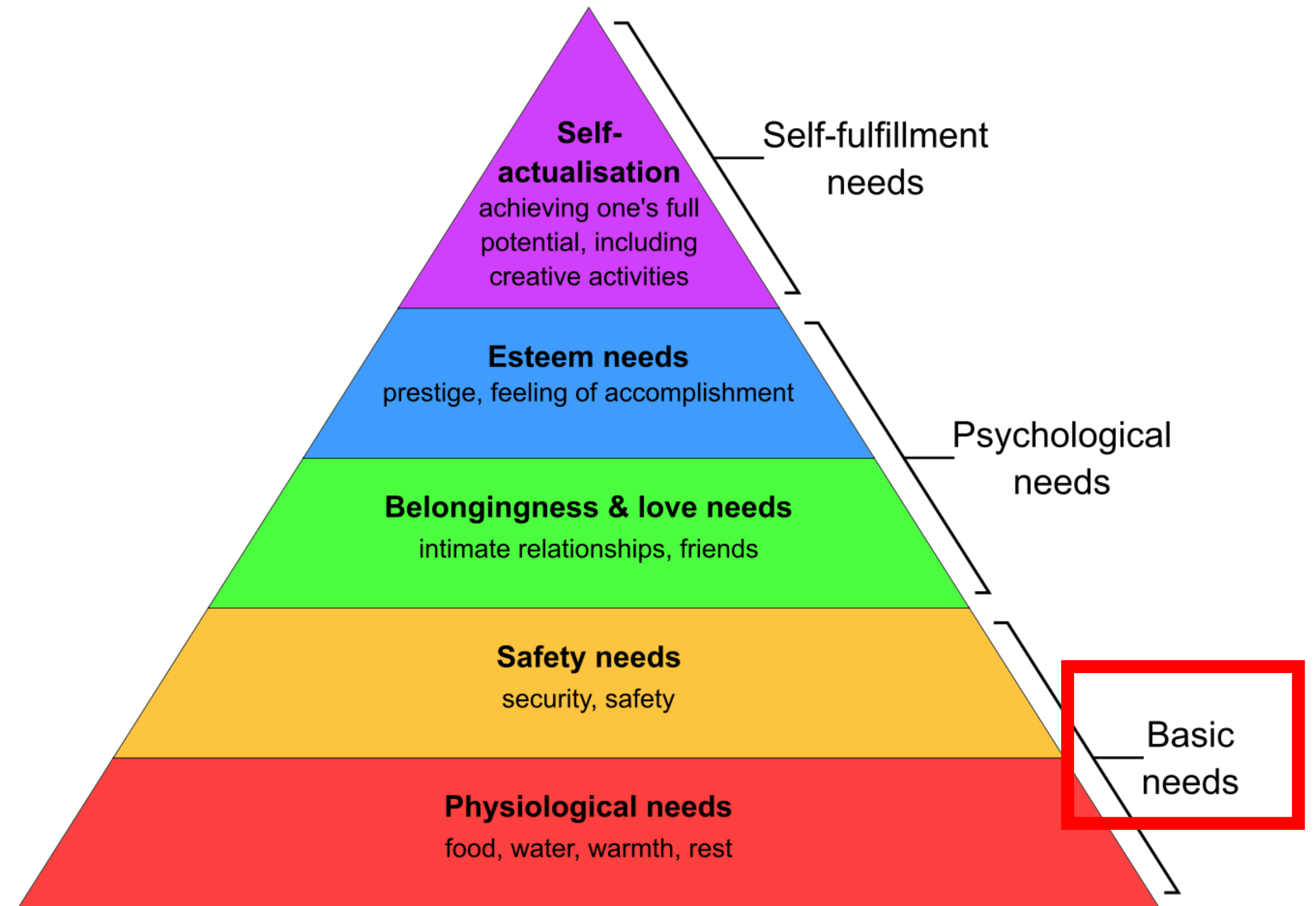


Impacts of climate change on health

thank you Dr Tom Porter

Globally

- Extreme weather
 - Heat, flooding, sea level rises
 - Effects on health
 - Individuals
 - Health service - accessibility, staffing and premises
 - Displacement of people – temporary and permanent
 - Mental health
 - Societal cohesion (migration)
- Food supply issues
- Water scarcity
- Vector-borne diseases
 - Malaria, dengue in new places
- Worsening inequalities



Climate change impacts on the very basics of human existence

Where do you live?

33,000

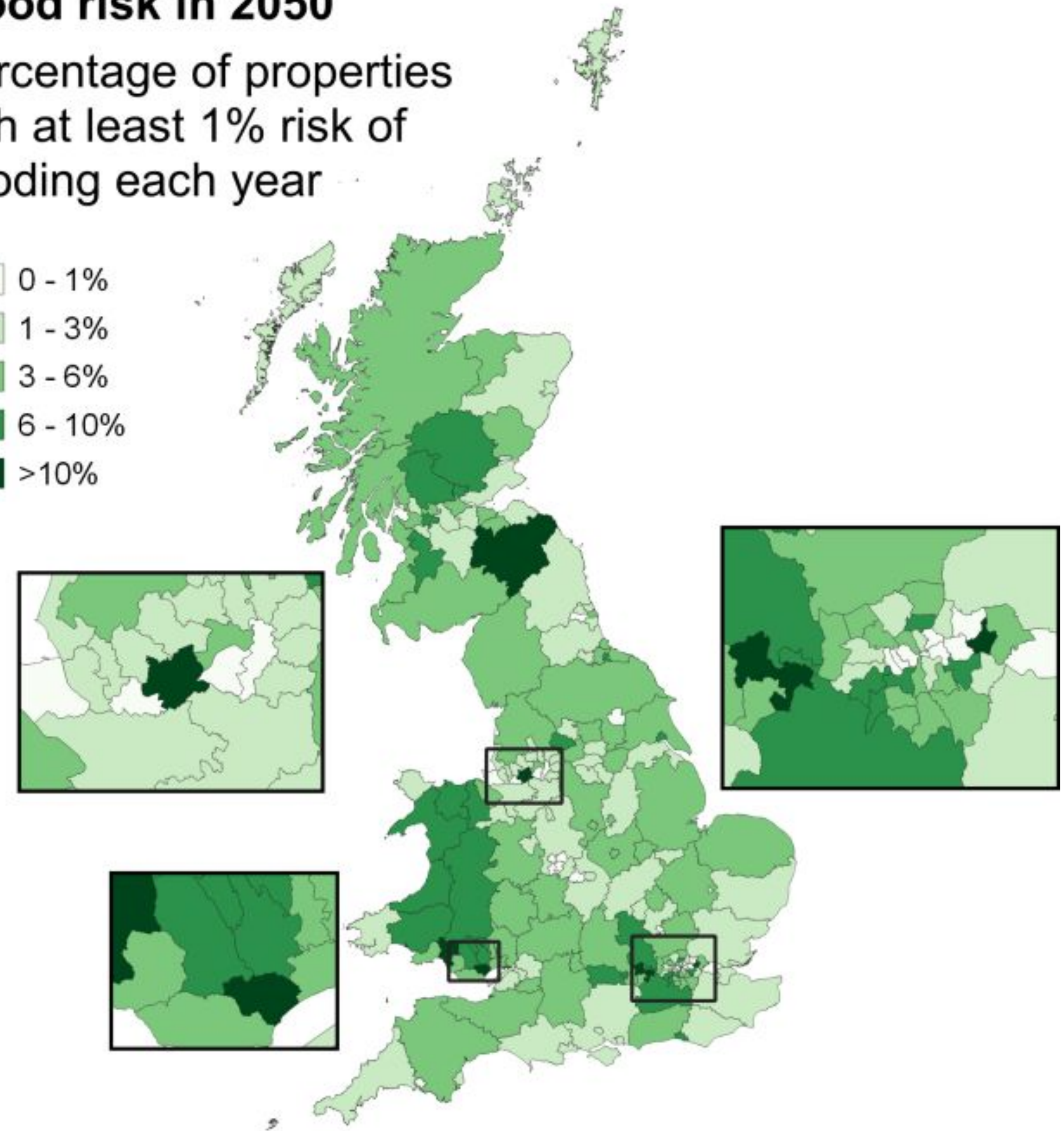
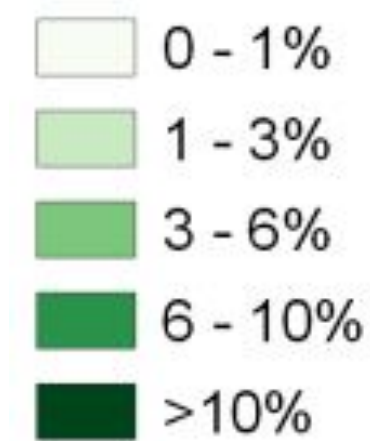
homes in Cardiff at risk of flooding by 2050

61%

of low-income renters don't have home contents insurance

Flood risk in 2050

Percentage of properties with at least 1% risk of flooding each year



What have we done?

- Directorate Green ICU Group
- Meet monthly
- Agree a set of actions
- Implement actions
- Directorate signed up to People, Planet and Profit.

Critical Care - our Green ICU Meeting

Monthly meeting. Representation very important

- Procurement
- Nursing
- Medical - Consultants and Doctors in Training and medical students
- AHPs - dietetics and physiotherapy
- Pharmacy
- Estates
- Strategic planning representation

Actions	People	Planet	Profit (economics)
Non Sterile Gloves use reduction	Education and culture change. Patients would benefit from better hand hygiene	Big reduction in waste. We use around 60 pairs of gloves per day per patient in Multiple Organ Failure	Current spend/annum = £110,000 50% of gloves worn when not needed. Potential saving = £55,000. Realistically more like £20-30,000
Reducing equipment on charge	Education	Energy savings	We won't see savings to the directorate
Equipment checks and rationalising plastic use	Daily checks	Reduce plastic waste	
Self inflating bag waste reduction	Rationalise use of reinflating resuscitation bag	500Kg /plastic 700Kg Carbon	£5000/yr
Non sterile drinking water for patients	Patients complain about the taste of sterile water	Carbon reduced emissions of 603Kg/ annum	Economic savings of £11,761
Recycling enteral feed bottles	Recycle - 21000 bottles/yr	Reduce plastic waste disposal by 1 tonne/yr	
Patient bed day energy cost assessment	Understanding of our impact	Need green energy source and renewables	
LED lighting installation		More energy efficient	We won't see savings to the directorate
Wash cups rather than disposable paper cups	Culture change		£5000/annum
Rationalising CVC insertion packs		Better use of resources	Likely to be cheaper and work with industry
Tree planting with Stump Up For Trees	Celebrate patients, relatives and staff. Good for peoples well being	Good for biodiversity. Carbon capture takes around 80 years to maximise	Each tree costs £4.50 to plant and care for . Done in conjunction with Stump Up For Trees
Automated office computer turn off	Automated	Better use of resources	We won't see savings to the directorate
Rationalising propofol lines	Less work for staff	More efficient	£20,000/annum
Virtual Follow Up Clinics	Patients are seen using IT platform Attend Anywhere	Saves just over 1 tonne of Carbon/Yr	Financial savings to patients and staff of reduced travel
Arterial blood gas analysis	Excess blood analysis and anaemia. Education and a SOP for when ABG should be taken	90,000 ABG done/yr in critical care UHW alone	10-20% reduction would save around £15-30,000/annum and around 20-40 litres of blood

Intensive Care Society - Sustainability

Chair of sustainability Prof Hugh Montgomery and Dr Eleanor Damm

- SBRI Healthcare - Small Business and Research Initiative
- Collaboration with Greener NHS Programme and Health Innovation Network
- Joint initiative between ICS, FICM and UKCCNA
- **Recipe Book**
- Will be free to access and pull together into one place a range of actions units can do to reduce their impact on the environment
- Will be complete within 12 months

Zentivism - a philosophical approach to critical care

- How do you personally practice critical care
- Sustainability needs to be at the centre of our thinking and practice of medicine
- BMJ - Sustainability is critical for future proofing the NHS <https://www.bmj.com/content/385/bmj-2024-079259>

Tests don't make people better. Escalating numbers of tests with no improvement in outcomes

Blood tests

Imaging

Decision making:

1. Who should we admit?
2. Lengths of stay

Clinical working and zentivism

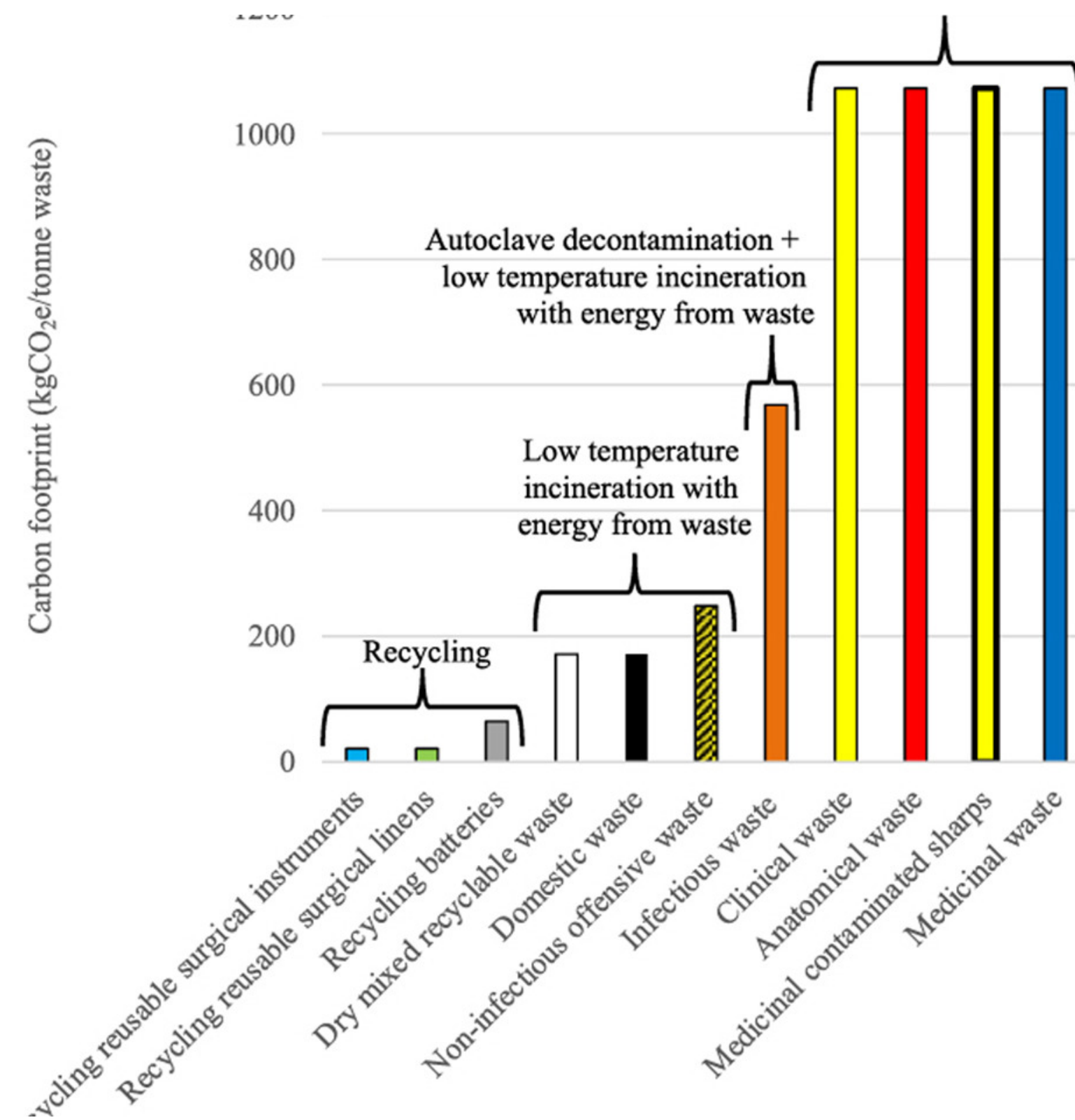
Is this the right imaging modality and will it change management and outcome?

MRI > CT > X ray > US

Waste from caring for 1 patient in multiple organ failure over 24 hours



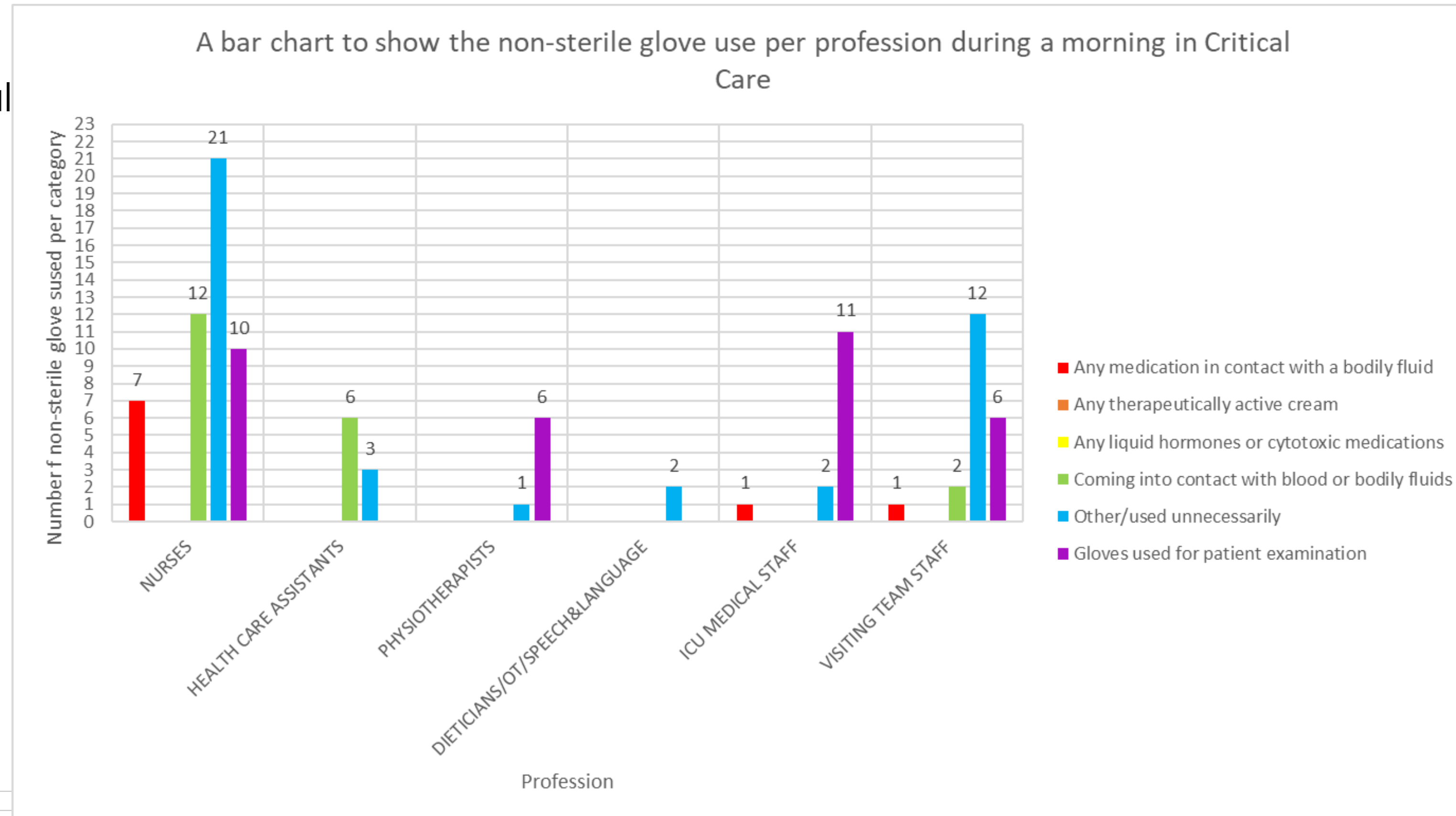
Who would have thought it is so difficult to get the right rubbish in the right bin



Gloves-off Campaign

Our directorate all
them

...n't need to wear



1 patient in critical care carbon costs over 5 days = 272.625 Kg carbon

Our unit's carbon footprint is in the region of 725 tonnes carbon/yr = 0.36% of CVUHB

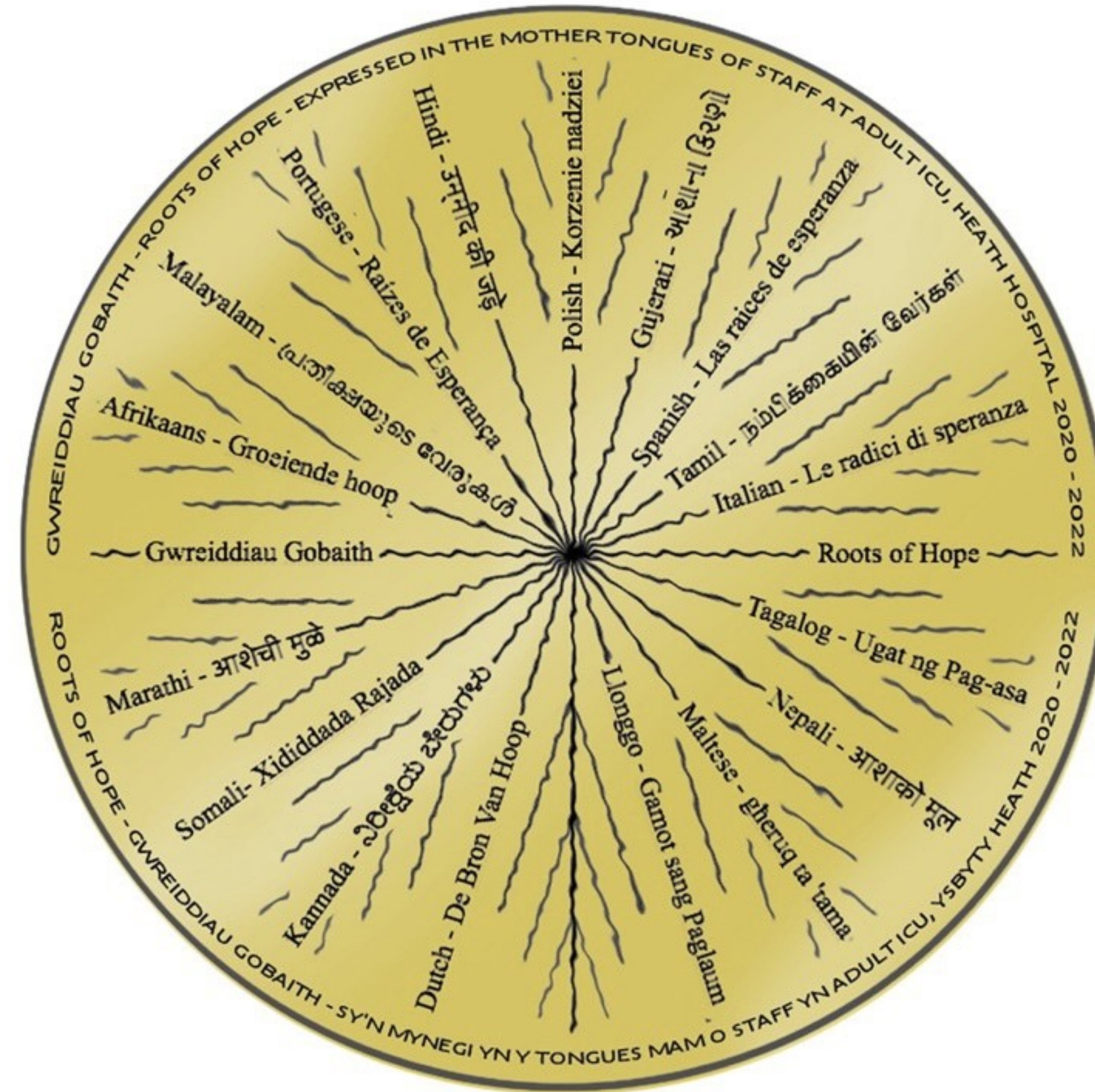
	Day 1	Day 2	Day 3	Day 4	Day 5
Energy costs	5.565	5.565	5.565	5.565	5.565
Procurement	22.26	22.26	22.26	22.26	22.26
Travel costs	20.75	20.75	20.75	20.75	20.75
Imaging costs	9.2				17.6
Blood testing costs	0.59	0.59	0.59	0.59	0.59
Totals (Kg Carbon)	58.365	49.165	49.165	49.165	66.765

Consultant working

- Virtual meetings now predominate
- Few consultants attend in-person in their SPA time
- Attendance at meetings much better
- (More meetings as a negative result?)
- Consultant travel in SPA time reduced by approx 30%

“Gwreiddiau Gobaith” - Roots of Hope





Not just biodiversity - it's also about celebrating human diversity

Possible Solutions

- Directorates need to sign up to decarbonisation - people, planet and profit
- Make sustainable (active) staff travel far easier - give staff incentives to walk or cycle
- Allow/give permission for more staff to work from home where possible
- Make unit sustainability far easier - share gains with others/local and national networks
- Positive action on sustainability needs to be rewarded

Critical Care Sustainability

- 1. Triple Bottom Line - People, Planet and Profit**
- 2. A climate emergency is a healthcare emergency**
- 3. We can improve sustainability at work**
- 4. We all have individual responsibilities - at work and at home**
- 5. ICS/FICM/UKCCNA (SBRI) will produce a RECIPE BOOK to help units achieve better sustainability**

That does not mean we need to be perfect

We need to provide the hope and belief that we can make a difference

Thank you and References

Thank you for the invitation to speak - Rebeca Romain

Thank you Dr Tom Porter and Jennifer Sebastien (medical student, Cardiff Medical School)

References:

1. From fringe to centre ground <https://healthmanagement.org/c/icu/issuearticle/moving-environmental-sustainability-from-the-fringe-to-the-centre-ground-in-critical-care>
2. BMJ - Sustainability is critical for future proofing the NHS <https://www.bmj.com/content/385/bmj-2024-079259>