



Healthcare Carbon Literacy Workshop & Life Cycle Analysis (LCA) Masterclass

Monday 3rd April 2023

Wifi: MelbConnectGuest
(no password required)



Presented by: Dr Scott McAlister, A/Prof Forbes McGain & Prof Eugenie Kayak

Department of Critical Care

www.medicine.unimelb.edu.au/critcare

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Healthcare Carbon Literacy Workshop & Life Cycle Analysis (LCA) Masterclass

PROGRAM

7:45-8.00	Registration, tea & coffee	WORKSHOP
8.00-8.20 Prof Eugenie Kayak	Welcome Introduction to addressing healthcare's carbon footprint	
8.20-9.45 Dr Scott McAlister	Introduction to Life Cycle Analysis (LCA) Carbon footprint analysis in healthcare and international overview Comparison of carbon footprint methods (EIOA, PBLCA, Hybrid)	
9.45-10.15 A/Prof Forbes McGain	Australian and NSW Health carbon footprints	
10.15 -10.35	Morning tea	
10.35- 11.30 Dr Scott McAlister	Further LCA analysis (Dr Scott McAlister)	
11:30-11:55 Jenny Smith	Mercy Health's carbon footprint	MASTERCLASS
11.55-12.15 A/Prof Forbes McGain	Practical implications of clinical LCA studies	
12:15-12:45	Lunch	
12:45-14:30 Dr Scott McAlister & A/Prof Forbes McGain	Facilitated reading and analysis of selected published LCA studies of varying quality	
14:30-14:50	Afternoon tea	
14:50-15:20 Dr Scott McAlister & A/Prof Forbes McGain	Continued evaluation of LCA studies	
15:20-15:45	Summary and feedback	



REDEFINE YOUR IMPACT ON DISASTER AND TERROR MEDICINE

Developed by the Department of Critical Care,
Graduate Diploma, Graduate Certificate and
Specialist Certificate study options available

Scan the QR code to investigate more: go.unimelb.edu.au/3rpe



CRCOS Provider Code: 00115



Human Factors in Critical Care

Enrol today to rethink how crises are managed when stress levels are high

- Eight-week online course with one day face-to-face workshop
- Designed and led by Associate Professor Stuart Marshall

Watch the course overview video



Find out more about the course:



Course start: 1 May 2023

Face-to-face workshop: Friday 16 June 2023

Cost: \$3,784 (assessed) and \$3,028 (non-assessed)

Entry requirements

To be considered for entry, applicants must have completed:

- a. A medical degree or,
- b. An undergraduate degree in any discipline and at least three years of documented relevant work experience in a health management, paramedicine, nursing or equivalent role.

Learn more about applying:



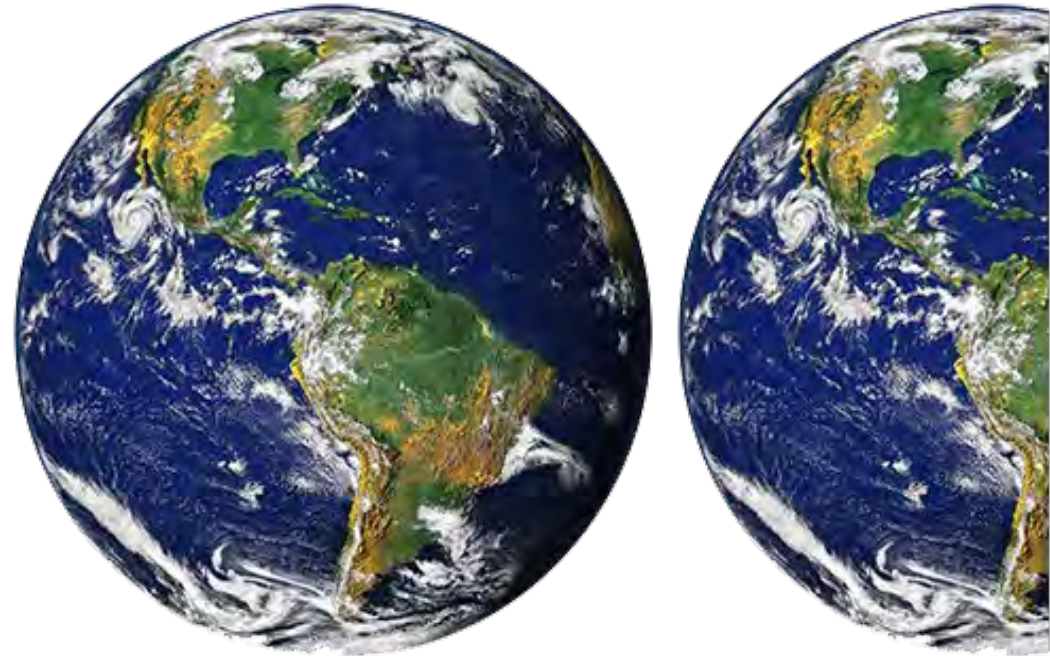


Introduction to addressing healthcare's carbon footprint

Eugenie Kayak
FANZCA, MBBS, MPH, MSc.

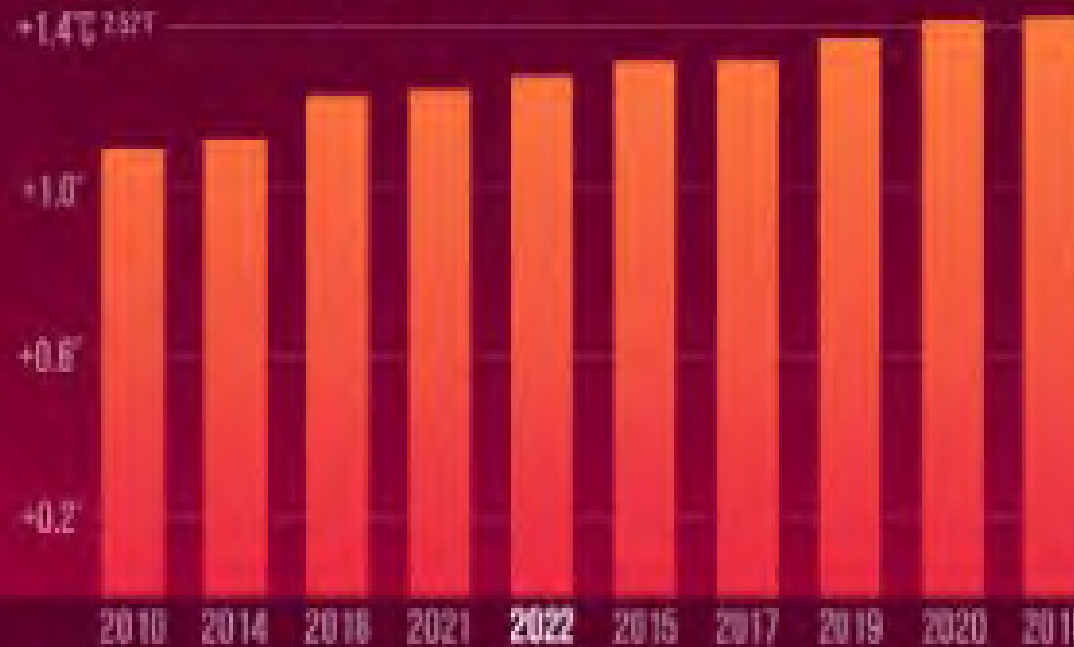
Enterprise Professor, Sustainable Healthcare,
The University of Melbourne.

Co-convenor, Sustainable Healthcare,
Doctors for the Environment Australia (DEA).



Our Planet, Our Health

10 HOTTEST GLOBAL YEARS ON RECORD



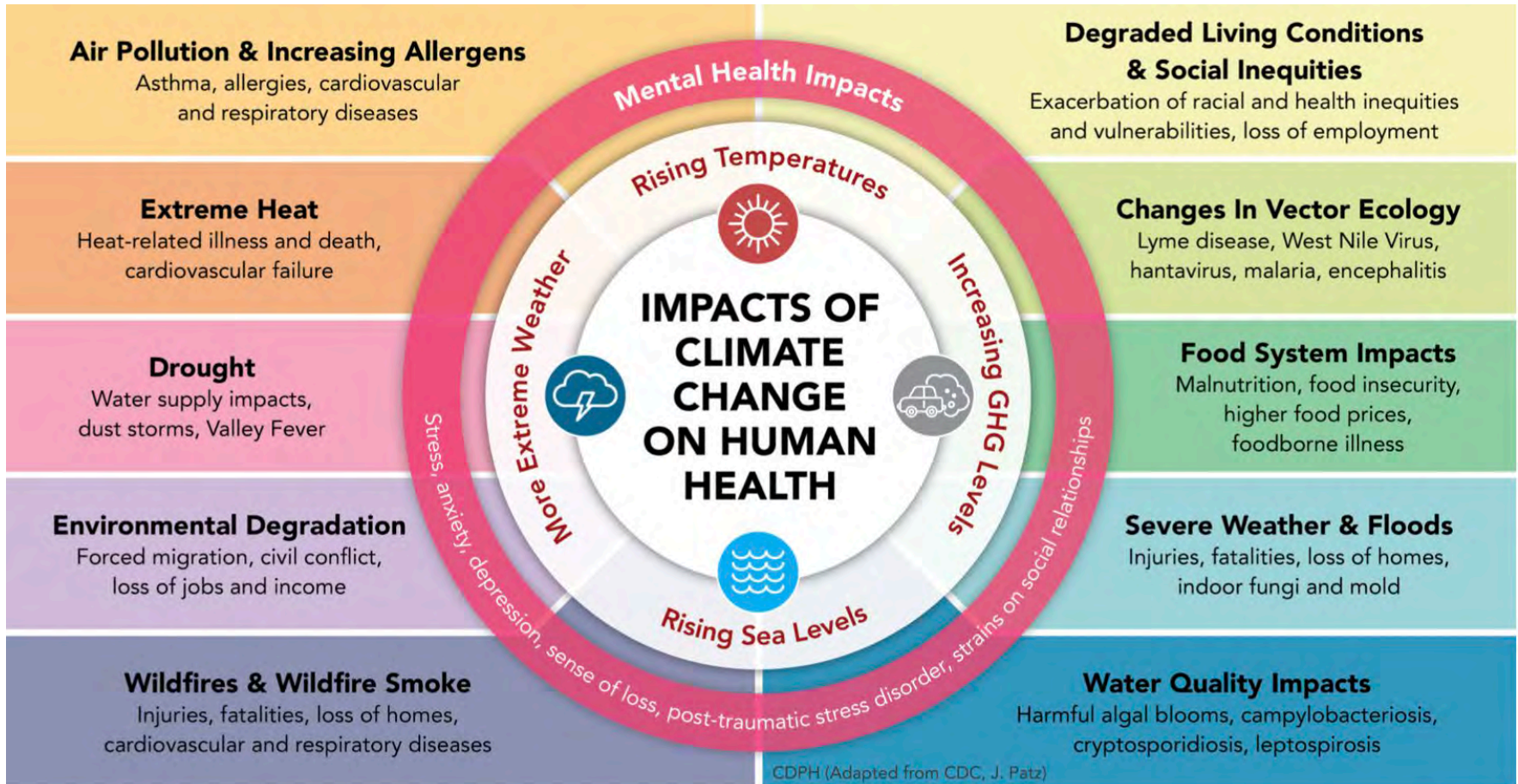
Source: NOAA (2010-2016), NOAA/NCDC (2017-2022) global temperature annual averages and adjusted to only include annual data (2010-2022). Data as of 1/20/2023.

CLIMATE CENTRAL

2016 hottest on record...2020 second...2019 third hottest

Impacts health - fundamental determinants:

freedom from disease +trauma,
air, water, food and shelter.



"the biggest health threat facing humanity"

Impacts healthcare services Australian examples

Heatwaves



Jan 2009

- 374 excess deaths (Vic)
 - 500 excess deaths (SE Aus)
- Melbourne
- 46% ↑ ambulance calls
 - 8-fold ↑ ED presentations
 - 3-fold ↑ deaths on arrival to ED

Bushfires



2019-2020 Estimate health burden smoke Qld, NSW, ACT, Vic

- 417 deaths (33 fire direct)
- 1124 CVS admissions
- 2027 resp admissions
- 1305 asthma ED presentations

Borches Arrigada et al., MJA 23 March 2020

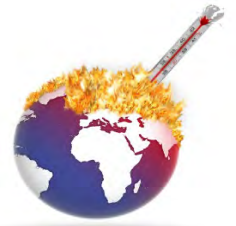


Floods and storms





Healthcare sector carbon footprint *a problem*



Globally

4-6% GHG emissions (4.4%)

if a nation 5th largest national emitter

(equivalent to 514 coal fired power plants)

Lancet Planet Health 2020; 4e:271-79
Health Care's Climate Footprint. 2019 HCWH/ ARUP report.

Australia

>7% of Australia's total CO₂e emissions

35.8 Mt CO₂e emissions (2014/15)

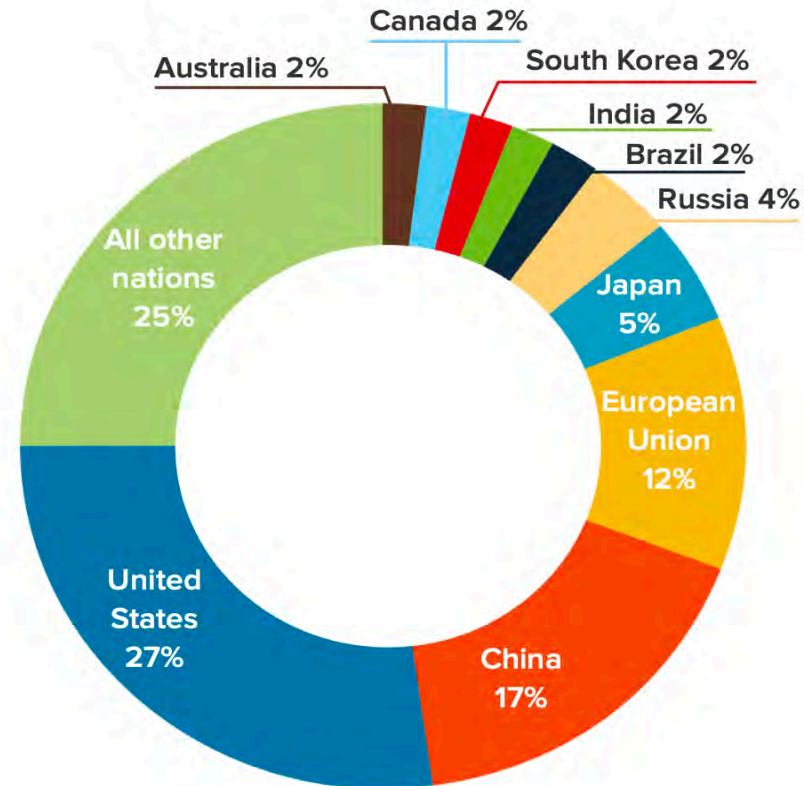
(Malik et al. 2018)

NHS England

25 Mt CO₂e emissions (2019)

(Tennison et al. 2021)

10 top emitters as percentage of global health care footprint (HCWH, ARUP 2019)



Health care emissions per capita by country				
Top emitters: (over 1t per capita)	Major emitters (between the 0.50t and 1t per capita)	Higher than average emitters (between global average 0.28t and 0.50t per capita)	Lower than average emitters	Unknown
Australia	Austria	Bulgaria	Brazil	Rest of World (ROW)
Canada	Belgium	Cyprus	China	
Switzerland	Denmark	Czech Republic	Croatia	
United States	Estonia	France	Hungary	
	Finland	Greece	India	
	Germany	Italy	Indonesia	
	Ireland	Malta	Latvia	
	Japan	Poland	Lithuania	
	Korea	Portugal	Mexico	
	Luxembourg	Slovenia	Romania	
	Netherlands	Spain	Slovak Republic	
	Norway	Sweden	Turkey	
	Russia	European Union		
	Taiwan			
	United Kingdom			

HCWH, ARUP. *Health Care's Climate Footprint, How the health sector contributes to the climate crisis and opportunities for action* (2019)

(Lenzen et al. 2020)



Health care + climate crisis: *the ethical paradox*

*“Health care has a responsibility to get its **own house in order**, to avoid the paradox of doing harm while seeking to do good.” (Godlee BMJ 2014)*



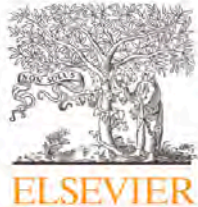
AMA Journal of Ethics®

October 2022, Volume 24, Number 10: E1004-1012

How Should We Respond to Health Care Generating Environmental Harm?

Healing mission, ‘do no harm,’ yet contribute to pollution and exacerbate environmental disease burden.

Health care can (must) be part of the solutionnot the problem..



Contents lists available at [ScienceDirect](#)

The Journal of Climate Change and Health

journal homepage: www.elsevier.com/joclim



Short communication

Australian health sector leadership and roadmap for healthcare decarbonisation to net zero emissions

Eugenie Kayak^{a,1,*}, Hayden Burch^{b,1}



Health care's reach is significant (Australia)

- > 10% GDP.
- Employs more than 1 mill Australians.
- Influence supply chains – major producers and purchasers of goods (**food**) and services (\$185.4 bill 2017/18).
- Very large capital estate holders and developers – hospitals own roughly 1,200 sites.
- Public hospitals alone contribute more than 50% of public sector emissions in each state/ territory.



Reduce environmental impact of the healthcare sector

Reduce carbon emissions to net zero by 2040

Interim goal: 80% reduction by 2030

Ensure that the healthcare system is better equipped to support future healthy populations (**resilient**)



Joint statement - Medical Professionals call for emissions reduction in health care

18 Mar 2021

AMA and Doctors for the Environment

The Australian Medical Association (AMA) and Doctors for the Environment Australia (DEA) are today calling on the Australian healthcare sector to reduce its carbon emissions to net zero by 2040, with an interim emission reduction target of 80 per cent by 2030.





Monash Health (VIC)

carbon neutral by
2030

Mercy Health (VIC/NSW)

Net zero by
2030

North Metropolitan
Health Service (WA)

carbon zero by
2050

Ambulance Victoria

Net zero by
2045

60%
reduction by
2030

Metro North Health (QLD)

Net zero by
2050

30%
reduction by
2030

80% reduction by
2030

Sydney Children's
Hospitals Network (NSW)

Net zero by
2035

Barwon Health (VIC)

Net zero by
2050

Northern Sydney Local
Health District (NSW)

Net zero by
2035

70-80%
reduction by
2030

Uniting Care (QLD)

70%
reduction (scope 1 & scope 2) by
2030

Hunter New England
Local Health District

Carbon Neutral by
2030



Coordinated in the
Pacific region by



GGHH Pacific Region
Annual Report 2021/23

Call for emergency action to limit global temperature increases, restore biodiversity, and protect health

6 September 2021



>200 international journals

- Many governments met the threat of the COVID-19 pandemic with unprecedented funding.
- The environment crisis demands a similar response
- Achieve environmentally sustainable health systems before 2040

Wealthy nations must do much more, much faster





Australian Government

Department of Health and Aged Care

A new climate change and health team is being established in the Branch to lead the Government's policy agenda in this area. The role of the team is to work in close collaboration with stakeholders to drive more efficient, consistent, measurable, and effective climate and health actions across adaptation, resilience, emission reduction and improving sustainability at a national level. Key areas of policy focus will include::

- reducing the carbon footprint of the health sector
- ensuring that the health sector is well prepared for the impacts of climate change; and
- maximising synergies between good climate policy and public health policy.



Health

Climate Risk & Net Zero Unit

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

[Home](#) | [Standards](#) | [Our work](#) | [COVID-19](#) | [Publications and resources](#)

[Home](#) > [Standards](#) > [National Safety and Quality Health Service \(NSQHS\) Standards](#)

Sustainable Healthcare Module

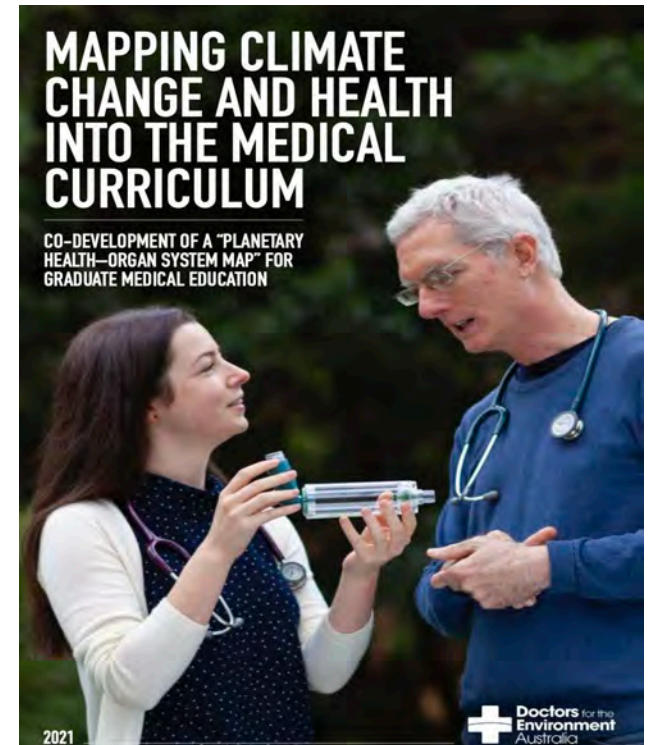
2022 released Pre-vocational Framework Outcome Statements:

- Responsibilities of the doctor include... teaching and promoting the environmental and financial sustainability of the healthcare system.
- The doctor recognises the broader determinants of health - social, economic, cultural, historical and environmental (including climate change).



A planetary health–organ system map to integrate climate change and health content into medical curricula

Health professionals must be prepared to address the health risks and impacts of climate change



Hayden Burch, Laura J Beaton, Grace Simpson, Ben Watson, Janie Maxwell and Kenneth D Winkel

Med J Aust 2022; 217 (9): 469-473. || doi: 10.5694/mja2.51737

Published online: 7 November 2022

Communique

Australian doctors call for more leadership from governments and the healthcare sector for urgent action on climate change to protect health August 2022

1. A net zero Australian healthcare system by 2040 with majority of emission cuts by 2030.
2. The development of a national climate change and health strategy to facilitate planning for climate health impacts, which the federal government has committed to.
3. Establishing a National Sustainable Healthcare Unit to support environmentally sustainable practice in healthcare and reduce the sector's own emissions.
4. Education of current and future doctors to:
 - a. be well equipped to care for patients and populations impacted by the adverse health effects of climate change, and
 - b. provide sustainable health care to support sector-wide emissions reduction.
5. Collaboration on climate change mitigation strategies with populations most at risk of climate-related adverse health impacts, such as Aboriginal and Torres Strait Islander peoples.



AMA



RACGP
Royal Australian College
of General Practitioners

Royal Australasian
College of Surgeons



RANZCO
The Royal Australian
and New Zealand
College of Ophthalmologists
THE LEADERS IN COLLABORATIVE EYE CARE



Australian College of
Rural & Remote Medicine
WORLD LEADERS IN RURAL PRACTICE



ANZCA
Australian and New Zealand
College of Anaesthetists



RACP
Specialists. Together
EDUCATE ADVOCATE INNOVATE



Australasian College
for Emergency Medicine



THE AUSTRALASIAN COLLEGE
OF DERMATOLOGISTS

We support:

- The establishment of an Austin Health Sustainability Committee with Executive sponsorship. This Committee should include senior clinical staff, junior clinical staff, student and Indigenous representatives
- A net zero emission target for Austin Health (by 2040 or earlier), and the development of a comprehensive emission reduction plan (7,8).
- All new buildings to be all-electric (net zero emissions) and, where possible, retrofitting current buildings to remove any fossil-fuel energy needs (9).
- The promotion and resourcing of Choosing Wisely as part of the strategy to reduce carbon emissions from clinical care and move towards sustainable models of care.
- The development of an electric vehicle / zero transport emissions strategy:

Add your name via this link to support us!

<https://forms.office.com/r/q10qk5GH5Q>





Health Care + Climate Care

Health care can (must) be part of the solution.....

Influence... lead multi-sectorial transformational change

Providing high quality care (today) in a manner that does not compromise the health, and delivery of health care, for both present and future generations.

(environmental, financial and social and impacts)

De-couple healthcare development from increasing carbon emissions

Climate resilient health systems, WHO 2015

Capable of anticipating, responding to, coping with, recovering from and adapting to climate related shocks and stress, so to bring about sustained improvements in population health, despite an unstable climate.

Win-Win-Win

