



EXPLORING ANAESTHETISTS' VIEWS ON THE CARBON FOOTPRINT OF ANAESTHESIA AND IDENTIFYING OPPORTUNITIES AND CHALLENGES FOR REDUCING ITS IMPACT ON THE ENVIRONMENT



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BACKGROUND

- Healthcare accounts for 7% of Australia's carbon emissions, half of which is produced by hospitals(1).
- Anaesthesia contributes to a large proportion of waste produced in surgical operating rooms(2).
- Volatile agents having a particularly significant greenhouse gas effect compared to using intravenous anaesthesia(3).
- A shift in practice by anaesthetists away from anaesthetic gases with high global warming potential could result in significant carbon and cost savings for the health system(4).

OBJECTIVES & METHODS

Objectives - to explore in-depth:

- Anaesthetists' perspectives on, and knowledge of, the carbon footprint of anaesthesia;
- How perspectives of the environmental impact of anaesthesia has impacted anaesthetists' practice and choice of anaesthetic;
- Anaesthetists' perceptions of opportunities & challenges to shifting towards more environmentally sustainable anaesthesia

Methods:

- Qualitative semi-structured interviews with 28 anaesthetists from four Western Sydney hospitals.
- Data analysis: framework approach using NVivo.

Table 1 Participant characteristics (N=28)

Demographic variable	Category	n (%)
Age (M = 43 years)	<30	1 (3.6)
	31-40	12 (42.9)
	41-50	10 (35.7)
	51-60	4 (14.3)
	>60	1 (3.6)
Gender	Female	11 (39.3)
	Male	17 (60.7)
Clinical area	General	18 (64.3)
	Paediatrics	4 (14.3)
	Obstetrics	1 (3.6)
	Cardiac	4 (14.3)
	ENT/neuro/urology	1 (3.6)
Yr completed training	1990-1999	2 (7.1)
	2000-2009	6 (21.4)
	2010-2019	14 (50)
	2020+	5 (17.9)
	Still in training	1 (3.6)
	% private practice	0%
1-10%		5 (17.9)
11-20%		4 (14.3)
21-30%		2 (7.1)
31-40%		4 (14.3)
41-50%		3 (10.7)
Main anaesthetic	>50%	1 (3.6)
	Sevoflurane	18 (64.3)
	Propofol TIVA	6 (21.4)
	Nitrous oxide	1 (3.6)
	Desflurane	1 (3.6)
Hard to tell	2 (7.1)	

RESULTS

Table 2 Themes & Subthemes

Views on environmental impacts & how these influence behaviour
Environmental care is secondary to patient safety
Sense of personal responsibility and guilt
Recognition that all agents have an environmental impact
Perceived barriers to shifting towards lower emissions anaesthesia
Personal beliefs that the environmental impact is minimal
Gaps in knowledge, skills, and experience
Habitual use of particular anaesthetic agents
Social norms & professional culture of anaesthesia
Time pressures and availability of resources
Uncertainty about changing practice due to gaps in current evidence

"Clinical care will always trump environmental impacts" [P12]

"While I decrease one, all I'm doing is increasing the other by making its production more so" [P23]

"For a lot of anaesthetists, TIVA is still a relatively new concept...and they are reluctant to use it" [P29]

"People like to follow the common practice in the department" [P13]

"We need more research into this area... especially propofol... its whole environmental impact." [P9]

"Why would you use [Desflurane]? Don't you love your kids?" [P30]

"The impact is minimal enough that [Desflurane] is worthwhile using" [P9]

"Most wanna give the same anaesthetic everyday... there's a certainty and comfort in that" [P13]

"Using a volatile is, for me, a more obvious choice 'cause it saves me time in setting up things" [P18]

DISCUSSION & CONCLUSION

- We identified key opportunities & challenges to reducing the carbon footprint of anaesthesia in Australian hospitals via individual behaviour change.
- These findings, when mapped onto a behavioural change framework, help to inform the design and development of communication and behavioural interventions aimed at mitigating the carbon emissions of anaesthesia & healthcare more broadly.

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