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Singapore's healthcare industry moving to measure carbon emissions

Often overlooked, healthcare's carbon footprint is larger than aviation and shipping. BY SHARANYA PILLAI

A LOCAL research institute is working on the first assessment of carbon emissions in Singapore's healthcare industry. This includes hospitals, polyclinics and primary care clinics.

The study will gather and analyse healthcare operators' expenditure data – which can include energy bills, transport costs and the usage of medical instruments – as a proxy to estimate their carbon emissions.

"You know the carbon footprint of a scalpel and of an anaesthetic gas; and you can look at how much of that a hospital consumed, and figure out what the underlying emissions were," said Professor Nick Watts, director of the National University of Singapore's Centre for Sustainable Medicine (CoSM).

CoSM is the institute conducting the study, which is expected to conclude early next year. The findings will provide the baseline data to shape the industry's decarbonisation strategy and measure its progress.

Knowing the baseline

"You need to know your baseline because it will tell you where your priority areas are that you need to act on to reduce your emissions... (When) you run the study again, and get better at running it faster over time, that helps you monitor progress as well," said Prof Watts.

Lowering healthcare emissions could mark a major step forward in Singapore's decarbonisation journey, as the sector is especially carbon-intensive. Globally, healthcare accounts for about 4 per cent of carbon emissions – more than aviation and shipping.

To make progress, however, it is important that Singapore first takes stock of the entire country's emissions, said Prof Watts, who was previously the chief sustainability officer of the UK's National Health Service and oversaw a similar study there.

If emissions data is analysed purely from the viewpoint of individual hospitals and clinics, the result could be that responsibilities for emissions are pushed from one party to another. A hospital, for instance, might claim that the emissions of the ambulances are out-of-scope – in other words, not part of its emissions and therefore not its problem.

"It's only once you define your boundaries as the entire system that you get a proper sense of what the actual emissions of the country are," Prof Watts said.

Associate Professor Benita Tan, co-chair of the sustainability office at national healthcare network SingHealth, said that such emissions data would help SingHealth to better prioritise its sustainability efforts. "One of the things that we really don't know, at this point, is how much carbon emissions each part of our healthcare delivery produces," Prof Tan said.

SingHealth is one of the healthcare operators working with CoSM on the study. SingHealth's network covers a large number of Singapore's polyclinics, hospitals and specialised healthcare institutes, including Singapore General Hospital, National Cancer Centre Singapore and KK Women's and Children's Hospital.

Prof Nick Watts, director of the National University of Singapore's Centre for Sustainable Medicine, notes that it is important that Singapore takes stock of the entire country's emissions. PHOTO: COSM

Healthcare's carbon intensity is due partly to the high energy consumption of hospitals, which emit 2.5 times as much greenhouse gases as commercial buildings.

"Hospitals are among the most energy-intensive facilities, operating 24/7 and requiring controlled environments for patient care – which demands significant heating, cooling and ventilation," said Dave Sivaprasad, managing director at the Boston Consulting Group (BCG).

Certain drugs and medical equipment also release potent greenhouse gases, such as the anaesthetic gas desflurane. An hour of surgery using desflurane releases emissions with a global warming effect equivalent to driving over 300 km, according to one industry estimate.

The healthcare industry also produces and consumes a lot of single-use equipment, and not just disposable plastics. Said CoSM's Prof Watts: "In an operating theatre, they throw out the scalpels, they throw out the scissors – all of these are metal instruments."

To be sure, there are good reasons why healthcare generates all these emissions. Throwing out scalpels after they are used helps reduce infections; and hospitals consume high amounts of energy because life-saving equipment often cannot be turned off.

Nevertheless, there is room for greater efficiency. Also, sustainability and patient welfare can go hand in hand.

At a dialogue organised by CoSM on Mar 13, some medical experts addressed fears that shifting to sustainable healthcare would compromise on patient safety and quality of care.

"Switching to regional anaesthesia instead of general anaesthesia avoids the high emissions of inhaled anaesthetic agents," said Dr Andrea MacNeill, co-chair of the Lancet Commission on Sustainable Healthcare. "We have found that patient experience is better: Their satisfaction scores are much higher (and) they get out of hospital faster."

Even simple clinical decisions that remove unnecessary steps can make a difference, said SingHealth's Prof Tan.

Clinicians can choose not to order excessive numbers of blood tests, for instance, while nurses do not have to open up more single-use equipment than needed before a surgery.

SingHealth has stepped up its sustainability efforts in recent years by cutting down on the use of desflurane and promoting recycling.

Long way to go

The healthcare sector is only just beginning its journey down a long decarbonisation road. Many healthcare operators have thus far targeted "low-hanging fruit" opportunities, such as implementing waste treatment facilities and optimising cooling services, said Sharad Somani, partner at KPMG Singapore.

"There remains a limited focus on designing and implementing comprehensive decarbonisation plans, including life cycle assessments, as well as encompassing the entirety of their operations and supply value chains," he added.

Healthcare also comes with multiple layers of suppliers. "This makes it challenging to influence the entire supply chain to decarbonise," said Alia Kaz, a knowledge expert in climate and sustainability at BCG.

That said, investor scrutiny of the sector's sustainability profile has been growing, said KPMG's Somani, and he expects that many shortcomings will be addressed before long.

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