

# Why would the healthcare industry need a doughnut?

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## Abstract

Doughnut economics provides a new framework for sustainable development, by balancing the ecological boundaries of the planet with the social boundaries of humanity. The framework provides a valuable opportunity for the healthcare industry to transition to a sustainable way of working – and for policy makers and health technology assessment to drive the healthcare industry towards this future. This article discusses what doughnut economics and the circular economy system can mean for the healthcare industry, policy makers, and health technology assessment, and the role that medical writers and communicators can play in the change to a sustainable future.

## Introduction

**A**s global citizens, many of us are becoming increasingly aware of the environmental crisis unfolding around us. Fundamental changes are required across human society for us to thrive as a species. Global economic policy and models are at the heart of the current situation and are central to fixing it, as recognised through the United Nations (UN) 2015 Sustainable Development Goals (SDGs)<sup>1</sup> and the essential ecological changes that are required.<sup>2</sup> Doughnut economics is a new way of economic thinking that could provide the radical changes needed to tackle the environmental crisis. This article focuses on those elements of this doughnut economics framework that particularly apply to the healthcare industry, health

technology, policy makers, and medical writers and communicators.

## What is doughnut economics?

The doughnut economics framework was developed by eminent economist Kate Raworth and is a simple representation of the social and planetary boundaries that underpin human well-being (Figure 1).<sup>2, 3</sup> The inner ring represents social boundaries, below which no-one should fall; these are the 12 social dimensions derived from the UN SDGs.<sup>1</sup> The outer ring is the ecological ceiling that we must avoid overshooting if we are to live within Earth's life-sustaining systems. The nine planetary dimensions, represented by the outer ring of the doughnut, have been proposed by an international group of Earth-system scientists.<sup>2</sup>

Currently, we as a species are overshooting nearly all of the planetary boundaries; for

example, global carbon dioxide levels, a control variable for climate change, were nearly 410 parts per million [ppm] in 2019, considerably above the safe upper limit of 350 ppm.<sup>2,4</sup> Meanwhile, a substantial proportion of the world's population is falling short of the social boundaries. The challenge to 21st century economists, and to all of us, is to bring ourselves inside the doughnut – into the safe and just space for humanity.

## The current situation

The prevailing mindset and priorities of governments and businesses alike do not align with the doughnut framework. Endless financial economic growth is a very commonly used target; however, infinite growth is not possible in a system with non-infinite resources (such as our planet Earth). The primary goal for many businesses is economic growth to satisfy short-term profits and shareholder return rather than improved human prosperity. In addition to linear growth, the linear economy is the norm, which can be described as “take” (energy, materials), “make” (a product), “use” (consume), and “dispose” (leading to waste) (Figure 2). However, this approach is incredibly wasteful of raw materials and finished products.<sup>2,5</sup> The benefits ecosystems provide in supporting humans have been described as “ecosystem services” (for example, carbon sequestration) and their monetary value has been calculated;<sup>6</sup> this has highlighted the importance of the natural world on human well-being,

but there is the risk that this approach reduces the living world to a price or asset on a balance sheet in a finance-centric economy.<sup>2</sup>

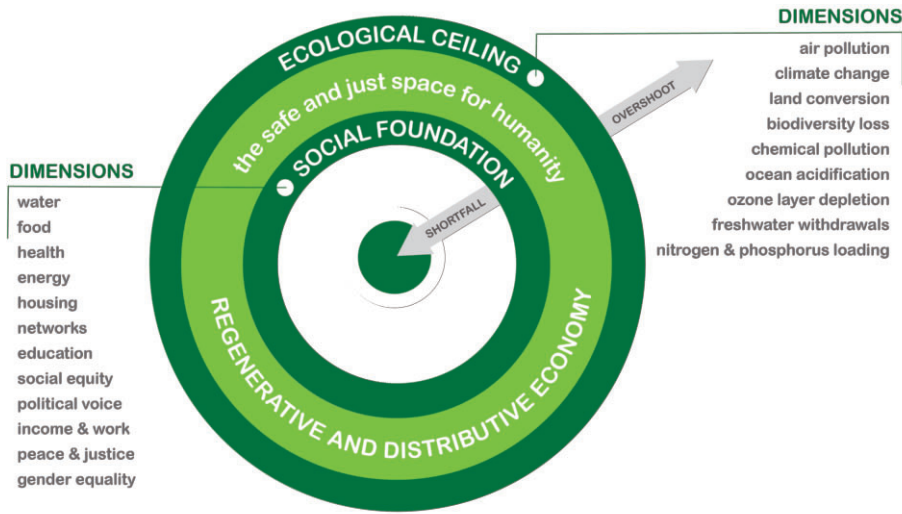
Attitudes and priorities are starting to change. The UN has set out 17 SDGs as a call to action to promote

The circular economy aims to eradicate waste through careful design. The biological or technical components of a product are designed for disassembly and re-purposing with minimal energy, with high-quality resultant products.



# A doughnut economy for the healthcare industry

The doughnut represents the social and ecological boundaries that underpin human well-being.



Humans are currently overshooting nearly all of the planetary boundaries, while a part of the world's population is falling short of the social foundation. The challenge is to bring ourselves into the safe and just space for humanity that lies inside the doughnut.

## What can the healthcare industry do?

Adapt your business to a circular economy



Reprocess and recycle medical instruments.



Promote reprocessing of single-use devices.



Don't sell a product, sell the service to repair it.



Move your business from money to people-centred.



## What can medical writers and medical communicators do?



Use energy from renewable sources and measure your office's carbon and social footprint.



Adapt regulatory documents to The European Green Deal's guidelines.



**THE GLOBAL GOALS**

Align the company's goals to the UN's Sustainable Development Goals.

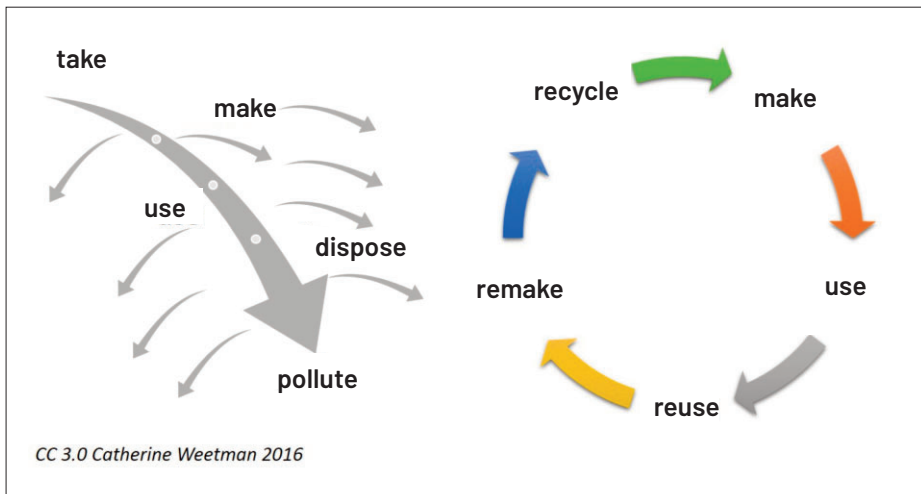


Apply the principles of regenerative, circular design to your use of resources and to how your business is run.

**Figure 1. The doughnut economics framework: the aim is to exist within the doughnut so that human activity does not go through the ecological ceiling and also ensures that no one is falling short of the social foundation.<sup>2</sup>**

Our work as medical writers and communicators could directly help reduce the shortfall in the social dimensions of "health" and "education", and improvements to one ecological or social dimension can positively impact the others.

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**Figure 2. The healthcare industry needs to move from a linear economy (left) to a circular economy (right) to move to the centre of the doughnut.**

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prosperity while protecting the planet, and the doughnut economics framework was instrumental in the negotiations behind the development of these goals.<sup>1,2</sup> The European Green Deal is a roadmap towards sustainability; it draws on elements of the doughnut framework and seeks to integrate the UN SDGs.<sup>7</sup> This has been detailed in a recent article in *Medical Writing*.<sup>8</sup> Moreover, a wide range of organisations and societies are already engaging with doughnut economics. Two visionary architects recently won the prestigious Pritzker Architecture Prize through their work regenerating buildings rather

than destroying and rebuilding them,<sup>9</sup> corporate businesses in clothing and retail are rethinking their corporate strategies in line with the doughnut framework,<sup>2</sup> and cities such as Amsterdam are striving to bring themselves within the doughnut by protecting the environment and natural resources, reducing social exclusion, and guaranteeing good living standards for all.<sup>10</sup>

**The doughnut, the circular economy, and business**

Current, degenerative, linear practices need to

change to ones that are regenerative by design, i.e. restore and renew life cycles. A system central to this is the circular economy, which provides an alternative to the linear economy (Figure 2). This system has the potential to positively impact multiple boundaries in the doughnut framework, both directly (such as reducing pollution and freshwater withdrawals) and indirectly through knock-on effects in other ecological and social dimensions (for example, reducing air pollution leads to healthier living conditions).

The circular economy aims to eradicate waste through careful design. The biological or technical components of a product are designed for disassembly and re-purposing with minimal energy, with high-quality resultant products. Systems are run on renewable energy, and the waste product actually provides a raw material for a new process or product.<sup>5</sup> Ideally, materials are reused in perpetuity.<sup>5</sup> The European Union published its Circular Economy Action Plan in 2015,<sup>11</sup> which is a key component of the European Green Deal.<sup>8</sup> Currently, European policies are somewhat conservative and focus on the technical elements of the circular economy rather than taking a more holistic and wide-reaching view, for example aiming to reduce litter rather than tackling the wider issue of over-consumption and materialism.<sup>12</sup> However, as the circular economy gains more traction, policies could become wider in scope and ambition.

Through her experiences with multiple business leaders, Kate Raworth outlines five corporate levels for stepping inside the doughnut



**Figure 3. Corporate target levels for sustainability and business responses to the awareness of Earth's planetary boundaries.<sup>2</sup> Many healthcare industries have Level 4 as a target but should really aim for Level 5.**

(Figure 3).<sup>2</sup> Some of these are probably familiar to us when we hear companies' proclaimed sustainability goals. Figure 3 shows us that many such goals – for example, carbon-neutrality – in fact can go further. The ultimate solution to entering the doughnut is regenerative design, by reconnecting and giving back as much as possible to the natural world that sustains us – making the world a better place than we found it.<sup>2</sup> One initiative to help businesses achieve regenerative design is biomimicry, which looks to nature's systems to create more sustainable designs and products, from biodegradable detergents to factories that function like a forest.<sup>13</sup> In addition, the Doughnut Economics Action Lab (DEAL) works with businesses, governments, and communities worldwide to turn doughnut economics into action, via, for example, policy making, reframing economic narratives, and systemic transformation.<sup>14</sup> Also, a prediction tool, the EN-ROADS climate simulator, is being used by organisations to design scenarios to limit future global warming.<sup>15</sup>

### Doughnut economics and the healthcare industry

The move away from financial gain to human prosperity illustrated by doughnut economics should resonate particularly strongly with the healthcare industry. The European Green Deal sets out a roadmap for greener practices in the healthcare industry.<sup>8</sup> The pharmaceutical industry is slowly moving towards environmental sustainability; drives towards green materials and cleaner production are showing progress, although other issues such as waste management currently lag behind.<sup>16</sup> In addition, many pharmaceutical companies are setting environmental and sustainability goals such as carbon neutrality and water use reductions,<sup>17</sup> although as discussed above, targets could be more ambitious; for example, a company could strive to become carbon-negative (i.e. removing carbon dioxide from the atmosphere rather than adding it).

A key challenge for healthcare business is changing the ambitions at the very heart of business models towards regenerative design. This means moving away from entrenched

thinking about financial targets and the linear degenerative design, towards assets centred around people and knowledge.<sup>2</sup> Financial partners, such as investors, are a key part of business. Regenerative enterprises need to move away from the old shareholder-prioritised short-term profit and growth-based dividends model, to longer-term investments with a fair financial return.<sup>2</sup> One example of such initiatives is paying a share of the income stream to investors in perpetuity instead of profit-related dividends.<sup>18</sup>

The circular healthcare economy system could be a valuable opportunity for the healthcare industry to step towards the doughnut economic framework. This system is based on the circular economy design and has been applied to reprocessing and recycling of medical and pharmaceutical devices and instruments. The move away from single-use materials is attractive both environmentally and financially. The COVID-19 pandemic has highlighted supply chain vulnerabilities of single-use equipment,<sup>19</sup> evidenced by shortages in single-use personal protective equipment resulting in their reuse.<sup>20</sup> In fact,

many single-use products can be designed for reuse. Steel surgical instruments can be sterilised and reprocessed; non-infectious waste can be recycled, and endoscopes or blood-pressure cuffs can be disinfected for reuse.<sup>21</sup> Even devices that can only be single-use on safety grounds (needles, catheters) could be recycled to recover the base materials.<sup>19</sup> Many hospitals are already reusing products designated as single-use to decrease costs, and some manufacturers are starting to move towards this model.<sup>21,22</sup> Furthermore, medical device manufacturers could shift away from selling a product to instead selling a service, where medical equipment is maintained rather than replaced, such as refurbishment of imaging equipment or sharpening of blades.<sup>21</sup> This encourages manufacturers to design reparability into their products.<sup>19</sup> In fact, moving to a service model could help companies expand their markets by reducing up-front costs<sup>19</sup> and help businesses achieve both ecological and economic balance.

Health technology assessment (HTA) and policy makers are ideally placed to facilitate the drive towards a more regenerative, circular healthcare economy. HTA provides information that inform about the best use of health resources from a societal perspective,<sup>23</sup> which corresponds with the social dimensions of the doughnut framework. Furthermore, environmental impact is already recognised as the unintended as well as the intended consequences of a health technology.<sup>24</sup> In addition, frameworks exist for incorporating environmental impacts into an HTA.<sup>24-26</sup> One of the remits of HTA is to support innovation and help implement new technologies,<sup>23</sup> so HTA can facilitate a shift towards a regenerative, circular economy system, where we can “do more good”, rather than merely “do less harm”.

When considering patient risk, regulatory bodies and professional societies tend to lean towards favouring single-use medical devices for the safety of the individual patient (e.g. minimising risk of infection). If we expand our

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concept of patient safety to population health, the social and environmental damages and pollution associated with the single-use supply chain must be taken into account, and single-use medical devices do not appear so attractive.<sup>19</sup> Regulation and oversight should promote population health as well as individual patient health and prioritise circular product design and reuse where safe to do so,<sup>19</sup> with single-use labelling only for those products for which safe reuse cannot be achieved.<sup>19</sup>

### Doughnut economics, medical writers, and medical communicators

What part do medical writers and communicators play in the changing landscape in the light of doughnut economics? First, it is important that we are cognisant of the initiatives driving sustainability. The European Green Deal underlies policies in the healthcare, pharmaceutical, and medical technology sectors, and we need to be aware of how these will be reflected in changes to regulatory documents, such as environmental risk assessment and changes to European grant applications.<sup>8</sup> As circular design of medical/pharmaceutical devices gains momentum, regulators and policy makers may bring in new legislation to align with circular design. This could affect the way medical device manufacturers operate and the nature of their products – we need to be mindful of such changes. Global value dossiers and messages provide scientific information demonstrating the value of a new product; in the future, these may include environmental or other sustainability information in addition to the effectiveness and safety of a product, which writers may be called on to communicate; therefore, writers need to understand the rationale behind the inclusion of such information in product development and use.

Waste reduction is a key element of the circular economy. This includes research waste, where valuable resources are wasted in unnecessary or poorly designed, conducted, or analysed research studies.<sup>27</sup> Medical writers have an important role in reducing research waste, for example by advocating appropriate publication and dissemination of research to interested stakeholders, and adherence to reporting guidelines.

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**Table 1. Additional information on doughnut economics**

Detailed explanation on doughnut economics	Raworth, K., <i>Doughnut economics: seven ways to think like a 21st-Century economist</i> . 2017, London, UK: Random House.
TED talk by Kate Raworth on doughnut economics	<a href="https://www.youtube.com/watch?v=Rhrcbcg8HBw">https://www.youtube.com/watch?v=Rhrcbcg8HBw</a>
DEAL – explanation of doughnut economics; tools and guidance on implementing doughnut economics	<a href="https://doughnuteconomics.org/">https://doughnuteconomics.org/</a>
UN Sustainability Development	<a href="https://www.un.org/sustainabledevelopment/sustainable-development-goals/">https://www.un.org/sustainabledevelopment/sustainable-development-goals/</a>
Goals European Green Deal	<a href="https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en">https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en</a>
Detailed explanation on the circular economy	Webster, K., <i>The circular economy: a wealth of flows</i> . 2nd ed. 2016, Isle of Wight, UK: Ellen MacArthur Foundation.

DEAL, Doughnut Economics Action Lab

ination of medical research to interested stakeholders,<sup>28</sup> adherence to reporting guidelines,<sup>29</sup> and ensuring that systematic reviews have well-designed protocols.<sup>27</sup>

As business employees (or freelancers) ourselves, it is important we keep our own house in order. We can take action to move our businesses into the doughnut, through educating ourselves on, and if necessary challenging, our companies' carbon and sociological footprints and targets, and strategic direction. For example, EMWA is currently investigating its own ecological footprint with the aim of reducing carbon emissions, as well as looking into the possibility of aligning with the UN SDGs. We can apply the principles of doughnut economics across many aspects of business, through, for example, our pensions (e.g. Environmental, Social and Governance schemes)<sup>31</sup> and resource use (using renewable electricity, reducing energy wastage, recycling and avoiding single-use crockery and plastic packaging at business lunches).

Our relationships with our clients can build

in elements of the doughnut economics framework and circular economy. Clients may well have sustainability targets they have to meet – we can support these targets with our clients.<sup>32</sup> The COVID-19 pandemic has shown us that well-run virtual meetings can offer convenience and free up travelling time, plus deliver huge gains in reducing our carbon footprint. In fact, attendance at one in-person congress can account for around a third of a UK resident's annual carbon emissions, compared with only 0.2% for virtual congresses.<sup>33</sup> We can support clients in advocating virtual meetings as a viable alternative to face-to-face meetings in the right circumstances, whilst also being mindful of peoples' needs for networking and collaboration opportunities that would previously happen at face-to-face meetings. Physical materials, such as those for exhibition booths, can be designed to be reused, repurposed, or at the very least, recyclable, to reduce waste along the regenerative, circular economy principles.

### Conclusions

It is becoming increasingly recognised that radical action is required if we are to continue to prosper, or even survive, as a species within a flourishing web of life. We can play our parts as medical writers and communicators and learn from the principles of doughnut economics to



work with our clients and teams to build sustainability into our working lives. It is of course beyond the scope of this article to cover the full story and far-reaching implications of doughnut economics, and further reading is highly recommended (Table 1).

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### Conflicts of interest

None to declare.

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