

## SDG COLUMN

# The UN SDG 12 and oral healthcare provision: responsible consumption and production

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



We reach the end of our cover series on the UN's Sustainable Development Goals (SDGs), concluding with SDG 12: Responsible Consumption and Production. In this issue's cover, we illustrate the choices dental professionals must make between reusable vs single-use items, emphasising the need for responsible choices which consider environmental impact. **Steven Mulligan**<sup>1</sup> considers SDG 12 in relation to the three P's – Planet, People and Profit – to emphasise how responsible consumption and manufacturing processes require a balance between environmental, social and economic factors for successful integration and application.

The United Nations (UN) Sustainable Development Goals (SDGs) emphasise the interconnected nature of how sustainable development requires a balance between environmental, social and economic factors for successful integration and application. The environment, society and the economy can also be denoted as the three P's – Planet, People and Profit; also referred to as the 'Triple Bottom Line', a concept popularised by John Elkington in 1994 which aimed to advance the traditional measure of a business's success (net income and profit) by adding social and environmental considerations.<sup>1</sup> This concept is central to SDG 12, which is to 'ensure sustainable consumption and production patterns'.

Let us consider dentistry in relation to the 'Triple Bottom Line'. Firstly, the 'environment'; dentistry in its current treatment-focused profile is not environmentally sustainable. Dentistry is material- and energy-intensive, with a high carbon footprint and pollution profile linked to manufacturing and distribution of materials and equipment; packaging and single-use waste items generated; and carbon emissions from patient and workforce travel.<sup>2,3</sup>

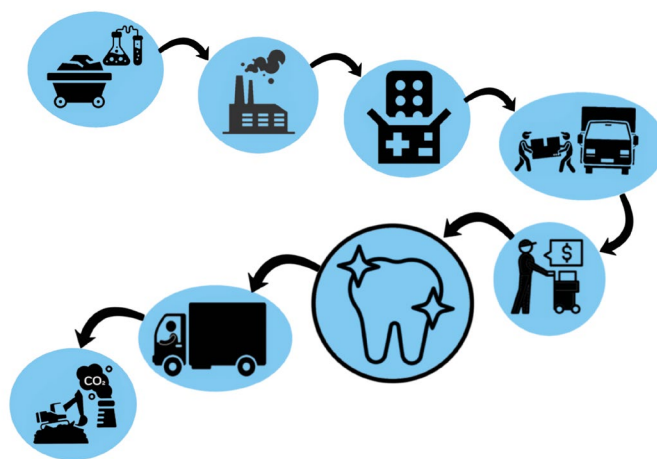
Secondly, in relation to the Triple Bottom Line's consideration of 'people', we should

recognise the stakeholders that make up the oral healthcare industry supply chain. Namely, manufacturers of goods, materials and equipment, the packaging and distribution network, end-users (dental teams and patients), and waste management facilities. A linear economy currently exists within our industry, where products and materials are manufactured, distributed, used, and disposed of, with no or limited consideration of recycling or reuse. A circular economy attempts to limit carbon impacts through managing waste streams and mitigating environmental impacts (Figs 1 and 2). Oral healthcare stakeholders

each have a responsibility to environmental sustainability that starts with local actions within immediate operating circles that expand to engage throughout the supply chain.<sup>4</sup>

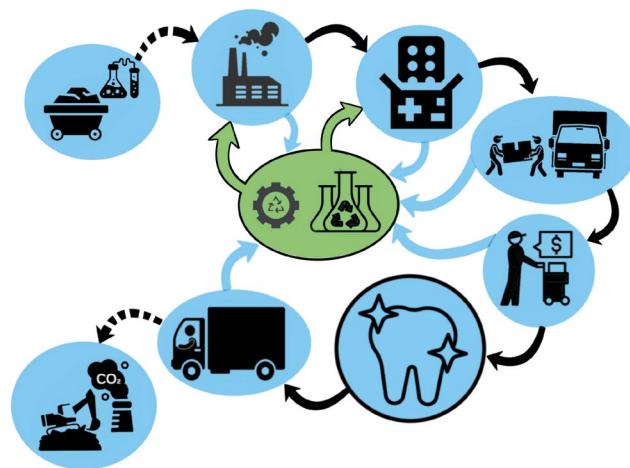
Thirdly, economy and profit. Like any other industry, dentistry needs to be financially sustainable so that it can be environmentally sustainable. It has been highlighted that the most effective and impactful way to improve sustainability in dentistry is through the prevention of oral disease with a reductionist approach. A reductionist approach should not be

Fig. 1 Linear economy, reproduced from Consensus on Environmentally Sustainable Oral Healthcare: A Joint Stakeholder Statement (2022),<sup>4</sup> published under a CC BY 4.0 licence



<sup>1</sup>FDI World Dental Federation Sustainability in Dentistry Task Team; University of Sheffield, Sheffield, UK.

Fig. 2 Circular economy, reproduced from Consensus on Environmentally Sustainable Oral Healthcare: A Joint Stakeholder Statement (2022),<sup>4</sup> published under a CC BY 4.0 licence



misinterpreted as an attempt to reduce appropriate dental services that place a strong emphasis on prevention and high-quality oral healthcare.<sup>5</sup> Effective screening and prevention programmes that focus on oral health education (OHE) and patient-centred, high-quality oral healthcare are vital, have immediate and future impacts, and should be appropriately funded. Consider the 6.5 million children in 2022 reported to have not had a dental appointment to provide preventive, high-quality oral healthcare.<sup>6</sup> Of this cohort, a significant proportion subsequently made up the 26,741 patients on general anaesthesia exodontia lists in 2021–2022 due to preventable caries with a significant economic impact of around £51 million.<sup>7</sup> If funding was made available for access to prevent disease instead of needing to fund such costly interventions, there would be a consequential positive impact on environmental sustainability, compounded by the reduction in the use of general anaesthetic gases, which have significant greenhouse gas potential.

SDG 12 states that by 2020, industries should have achieved ‘the environmentally sound management of chemicals and wastes generated through their life cycle to reduce the release of pollutants to air, water and soil in order to minimise adverse impacts on human health and the environment’. Progress is being made in dentistry, through the example of the European Commission’s revision of the Minamata Regulation and the intended phase-out of dental amalgam from January 2025.<sup>8</sup> This is important when we recognise dental amalgam accounts for

40 tonnes of mercury used in the EU annually, of which a significant amount will be released into the environment at the end of its life cycle through crematoria emissions or into the soil and water around graveyards.

‘Patients should be made aware of not only the personal benefits of good oral health, but also the environmental impacts.’

SDG 12 also states that by 2030, industries need to substantially reduce waste generation through prevention, reduction, recycling and reuse. This is best achieved in dentistry by integrating circular economy concepts as described above and accepting that prevention of oral disease is the optimal method for our industry to achieve this goal. This aspiration is clearly stated in the Consensus Statement on Environmentally Sustainable Oral Healthcare (2022), ratified by supply chain stakeholders.<sup>4</sup>

SDG 12 suggests ‘companies, especially large and transnational companies, adopt sustainable practices and to integrate sustainability information into their reporting cycle’. Dental industry manufacturing stakeholders are required to have environmental, social and governance (ESG) considerations as part of their business strategies, which identify environmental impacts as part of integrating this into the company’s ‘Triple Bottom Line’. It can be envisaged that there will be a time when the sustainability information of dental practices will be an important way in which we can

understand and improve the carbon footprint and environmental impact of dentistry.

SDG 12 states that ‘by 2030, people everywhere should have the relevant information and awareness for sustainable development and lifestyles in harmony with nature’. This applies to dentistry with the training of dental teams via the integration of sustainability into undergraduate dental curricula and further professional development courses and programmes.<sup>9</sup> Patients as end-users in the dental supply chain should be made aware of not only the personal benefits of good oral health, but also the environmental impacts.

Incorporating UN SDG concepts, establishing a collaborative, circular economy throughout the supply chain, and most importantly, providing high-quality preventive and operative care are the mechanisms via which dentistry can become more environmentally sustainable. ■

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