

A Way Forward for A Greener Future – Sustainability in Oral Health Care

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ABSTRACT

Oral health professionals promote universal oral health for diseases that are primarily preventable and/or treated in their early stages. The delivery of oral health care, whether through therapeutic interventions, preventive care, or long-term maintenance, causes pollutants and has a significant carbon footprint. Oral health practitioners share a moral obligation to society to offer optimal oral health services, ensure patient safety, and decrease their environmental impact. To ensure the long-term viability of oral healthcare services, all organisations should recognise the critical need to work together to develop knowledge, identify remedial possibilities, and exchange best practices that are environmentally friendly.

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INTRODUCTION

The United Nations Agenda for Sustainable Development calls for critical action from all sectors, highlighting that pollution and climate change are two of the world's most pressing issues today.¹ With this impending danger in mind, all sectors, including the dental industry and the oral healthcare community, can deliver solutions and interventions that contribute to reducing and reversing climate change.

Multiple international and national stakeholders have developed policies in response to climate change and the environmental impact of the healthcare industry. Some dental-specific policy documents have been developed more recently, such as the Consensus statement on Environmentally Sustainable Oral Healthcare by joint stakeholders. Here, The World Dental Federation recognises the importance of collaborating with all stakeholders in the interests of sustainability and suggests that dental industry should integrate the Sustainable Development Goals (SDGs) into practise every day and assist in a switch to a green economy.²

The COVID-19 pandemic, which has had the unforeseen but severe result of generating massive volumes of Single Use Plastics (SUP) waste, is a significant recent challenge to sustainability in dentistry. Environmental effects, using single-use plastics (SUPs), dental supplies, and ancillaries are the main pollution concerns. Such issues are influenced by broader concepts, such as the COVID-19 pandemic's effects, supply chain effects, and responsible pro-environmental behaviour of citizens.³ Single-use plastics provide a significant environmental concern in the healthcare industry. To operate and deliver safe and efficient healthcare outcomes, SUPs are necessary. It is possible to achieve net zero emissions, carbon-negative emissions, and a decrease in plastic trash dumped in landfills by taking personal responsibility for professional activities and making informed decisions at every stage of the healthcare supply chain.

Accordingly, recent and comprehensive scoping reviews have identified several themes that encompass all the major environmental sustainability issues in dental practice. These include waste management (SUPs), policy and guidelines, environmental consequences, CO₂e (Carbon dioxide equivalent), water, and air; reduce, reuse, recycle, and rethink; procurement; materials for clinical use; research & education.³ Through a comprehensive adherence to environmentally friendly practise, the entire oral healthcare supply chain, which includes the care professions, manufacturing sector, distribution and waste management, may significantly contribute to efforts to mitigate climate change.

A sustainable approach to oral healthcare results in significant CO₂e reductions, better patient care, cost savings, staff satisfaction, and improved quality of life.² As we reduce the usage of dental amalgam, a

significant pollutant, the effects of dental materials on the environment should be considered. Alternatives like tooth coloured instead of silver amalgam restorations reduce the negative impact on the environment. Reusing dental products like reusable cups, cloth operatories and sterilisation methods, and reusable metal suction tips will decrease the number of products needed to complete the treatment course, providing environmental and financial benefits. Additionally, digital x-rays benefit from using around 70% less radiation than traditional x-rays, using less paper and landfill space, and improving water systems and landfills, eliminating lead foils and harmful x-ray development chemicals resulting in positive climate change effects. According to Eco-friendly Dental Association, \$8,769 can be saved annually by switching to digital technology.⁴

Another strategy to cut the carbon emissions brought on by long supply chains and the transportation of goods is to choose producers and disposal services located near the end user. In addition to this, reducing the need for treatment has a significant impact on sustainability. It is possible by combining effective prevention programmes with the distribution of high-quality consumer health goods and effective clinical interventions.⁵

The strategic use of Information Technology to develop efficient care pathways, with teleconsultations as an example, can help lessen the impact of commuting traffic. High-quality, impactful research is key to any successful sustainability practices in the industry. The dental industry has to foster innovation, high-calibre research, and effective operational models to locate and support sustainable practices. Oral healthcare professionals, who act as a vital link between the dental sector and patient education, are responsible for educational programmes. Sustainable dental practices should be incorporated into undergraduate dental programmes to raise knowledge and comprehension of environmental issues.⁵

Dental practitioners can promote environmentally friendly dental practices by advising their patients to buy biodegradable dental supplies like bamboo or participate in recycling campaigns. The global community can hold companies accountable for developing recyclable and biodegradable products with minimum packaging at the commercial and industrial levels.⁶ Strong professional and patient involvement can directly and significantly reduce waste, CO₂ emissions, and other environmental issues associated with dental practice.

Furthermore, recycling technology is advancing rapidly, and a strong individual and team attitude toward recycling is required to build efficient and useful collecting and processing techniques. Dental professionals should find the best eco-friendly alternatives in their day-to-day practices. For instance, The FDI (World Dental Federation) created the interactive Sustainability in Dentistry toolkit to assist dentists and their teams in directing their ef-

forts toward more sustainable practices.⁷ Moreover, Regulations should be in place to support the practice of sustainable dentistry so that practitioners know the rules and guidelines they must follow.

CONCLUSION

To ensure the long-term viability of oral healthcare services, all organisations should recognise the critical need to work together to develop knowledge, identify remedial possibilities, and exchange best practices. The dental sector's goal in achieving sustainability should be to engage legislators, manufacturers, distributors, healthcare professionals, and the general public as key stakeholders and end users of these services.

All stakeholders involved in dental practice should understand that every sustainable activity will have a net positive environmental impact, no matter how modest. Every sustainable behaviour will serve as a platform and stimulus for involvement in other, more beneficial practices in a snowball effect.

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