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Standard Practice for Managing Sustainability in Dentistry¹

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1. ~~Scope~~ Scope*

1.1 This practice provides a set of generally recognized activities ~~governing to govern~~ management of sustainability in dentistry and related dental service ~~practice and practice~~. It is a management system framework that assists dentists and dental service organizations to enhance their ~~respective~~ organizational performance and effectiveness. It offers an integrated framework to ~~managing~~ manage social, economic and environmental aspects of an organization's activities. While this practice is intended to be adopted and used by dental professionals and dental service organizations of any size and ~~specializations including those being a part of large healthcare service organizations,~~ specialization, the scope of this practice ~~addresses the expectations of and is relevant to dental service provider organizations' stakeholders.~~ addresses the expectations of and is relevant to dental service provider organizations' stakeholders as well.

1.2 This practice is intended to be used with pertinent dental office management principles and guidance documents published by professional dental association ~~in which dental services are delivered.~~ associations.

1.3 This practice should be implemented in alignment with the United Nations 17 Sustainable Development Goals² (SDGs to be achieved by 2030) and the World Dental Federation (FDI) Sustainability in Dentistry³ Policy of August 2017.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate ~~safety~~ safety, health, and health ~~environmental~~ environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *BSBSI Standard:*⁴

BS 8900-1:2013 Managing sustainable development of organizations—Part 1: Guide

3. Terminology

3.1 *Definitions:*

3.1.1 *context of dental service organization, n*—business environment; combination of internal and external factors and conditions that can have an effect on the dental service organization's approach to its dental service, investments, and stakeholder.

¹ This ~~test method~~ practice is under the jurisdiction of ASTM Committee E60 on Sustainability and is the direct responsibility of Subcommittee E60.80 on General Sustainability Standards.

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² The United Nations 17 Sustainable Development Goals (<https://sdgs.un.org/goals>, retrieved 17-Mar-2021).

³ World Dental Federation (FDI) Sustainability in Dentistry (adopted by FDI General Assembly August 2017 in Madrid, Spain (<https://www.fdiworlddental.org/sustainability-dentistry>, retrieved 17-Mar-2021).

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

*A Summary of Changes section appears at the end of this standard

3.1.2 *dental professional, n*—individual person who provides and performs dental services within a dental service organization.

3.1.2.1 *Discussion*—

Within the context of this practice, dental professional may include dentists, registered dental assistants, licensed oral hygienists, dental technicians, and dental laboratory technicians.

3.1.3 *dental service, n*—intangible output that is the result of at least one activity or procedure necessarily performed at the interface between the dental professional and his/her patient.

3.1.4 *dental service organization, n*—person or group of people holding proper and recognized dental service accreditation, license, or certification that has its own functions with responsibilities, authorities, and relationships to achieve its objectives.

3.1.5 *evidence-based dentistry, n*—approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence relating to the patient’s oral and medical condition and history with the dentist’s clinical expertise and the patient’s treatment integrates the most current scientifically relevant evidence, the dentist’s clinical experience, and the patient’s oral health needs and preferences.

3.1.6 *management system, n*—a set of interrelated or interacting elements of a dental service organization to establish policies, objectives, and processes to achieve those policies, processes, and procedures used by an organization to ensure that it can fulfill the tasks required to achieve its objectives.

3.1.7 *policy, n*—the formal expression of intentions and direction of a dental professional or a dental service organization as formally expressed by the person or group of people who directs and controls its dental service activities at the highest level.

3.1.7.1 *Discussion*—

Throughout this practice, “activity” is used to refer collectively to activities, products, and services rendered through or directly by a dental professional or an affiliated dental service provider organization.

3.1.8 *sustainability, n*—degree of sustainable development in the context of a dental professional or dental service organization.

3.1.9 *sustainable development, n*—development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

3.1.9.1 *Discussion*—

Sustainable development is about integrating the goals of a high quality of life, health, and prosperity with social justice and maintaining the earth’s capacity to support life in all its diversity. These social, economic, and environmental goals are interdependent and mutually reinforcing. Sustainable development can be treated as a way of expressing the broader expectations of society as a whole.

4. Significance and Use

4.1 The dental industry’s size and scope translate to a significant environmental and social footprint. Moreover, dental professionals and dental service organizations are calling for a consensus-based practical guidance document to support cost-efficient integration of sustainable development principles into their day-to-day management with the goal of achieving carbon neutrality, for example, by reducing CO₂ emissions. Formation of ASTM Subcommittee E60.80.7, and development of this practice recognizes and fulfills this demand.

4.2 To most dentists, it remains unclear what constitutes sustainable dentistry practice in principle. This presents a challenge to incorporating a systematic and pragmatic management framework that identifies, prioritizes, and supports relevant sustainable development issues. Most dental professionals are primarily limited to recognition of environmental impacts or so-called “green practices” or “green dentistry.”

4.3 Given management commitment as the first step, this practice describes procedural feasibility of integrating measurable sustainability performance in daily dental service activities. Preferential treatment is not given to claims of “green” practices. Strategic decision-making needs to be a balanced approach that takes into consideration environmental, social, and economic issues. This practice provides a comprehensive guidance on managing sustainability issues and offers a systematic approach and a management framework that assists dental professionals and dental service organizations to improve overall performance and effectiveness in their products and deliveries.

4.4 This practice offers a concerted approach to managing social, economic, and environmental aspects of dental organizations; stipulates minimum sustainability considerations and requirements; and provides a framework to embed management of issues related to sustainable development into day-to-day decision-making and dental service activities. These management considerations include, but are not limited to, water, air quality, energy, waste management, transportation, responsible procurement, supply chain management, and green buildings. Additional considerations include social responsibility related to patient, staff, and the community; governance and leadership; and meetings.

~~4.5 There have been growing interests from dental professionals and dental service organizations in the United States and elsewhere in the world calling for a consensus-based practical guidance document in support of the cost-efficient integration of generally recognized sustainable development principles into day-to-day management of dental practices both for individual dental professionals as well as dental service organizations. Formation of ASTM Subcommittee E60.80.7 and development of this practice recognizes and fulfills such demand. While it is recognized that current interests expressed by most dental professionals are primarily limited to environmental impacts attributable to existing dental practices, or so-called “green dentistry,” it remains to be unclear as to what constitutes sustainable dentistry practice in principle and presents a challenge to incorporate a systematic and pragmatic management framework identifying, prioritizing, supporting, and addressing relevant sustainable development issues in a dental service provider’s practice. Given the breadth and extent of management commitment, this practice embodies emerging comprehension and procedural feasibility of practical realization of measurable sustainability performance in daily dental service activities without given preferential considerations or uneven weight to one or more existing claim of “green” in dental practice nor does it give favor to any particular group of dental equipment or product. Aligned with generally recognized principles of sustainable development, this practice provides a comprehensive guidance on managing sustainability issues in dental practices and offers a system approach and management framework assists dental professionals and dental service organizations to improve overall performance and effectiveness in their products and deliveries. It offers a concerted approach to managing social, economic, and environmental aspects of dental practice; stipulates minimum sustainability considerations and requirements; and provides a framework for embedding sustainable development issue management into day-to-day decision-making and dental service activities. This practice is intended to be adopted and used by dental professionals and dental service organizations of any size and specializations including those being a part of large healthcare service organizations. Further, in the scope of this practice addresses the expectations of, and is relevant to, practice, expectations are addressed that are relevant to dental service organizations’ stakeholders starts with identification of possible benefits and desirable outcomes of managing for sustainability in dentistry. The approach stipulated in this practice This approach is to provide a framework for embedding sustainability management in everyday decision-making decision-making and is necessarily challenging, provoking, and continually evolving. Effective and continuing stakeholder engagement is essential in sharpening understanding of real issues and broadening buy-in. It is recognized that building confidence in processes and sustainable outcomes is an important part of this practice and that certain dental service organizations may wish to use some forms of independent verification. This practice shall not be viewed in isolation as there are many pertinent helpful texts, conventions, codes, and publications available; it acts as a guide to connect various existing “green” dental practices and services and offers a system approach to embedding sustainable development thinking that fits and is readily realizable for dental service organization of any size or specialization. buy-in.~~

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5. Dental Service Organization

5.1 Understanding the Context of a Dental Service Organization:

5.1.1 The dental service organization shall determine external and internal issues that are relevant to its purpose and affect its ability to achieve the intended outcome(s) of its management system for sustainability in dentistry.

5.1.2 *Understanding the Needs and Expectations of Stakeholders*—The dental service organization shall determine:

5.1.2.1 Stakeholders who are relevant to the management system for sustainability in dentistry;

5.1.2.2 Relevant requirements of these stakeholders; and

5.1.2.3 Applicable legal and other requirements to which the dental service organization subscribes.

5.1.3 *Determining the Scope of the Management System for Sustainability in Dentistry:*

5.1.3.1 The dental service organization shall determine the boundaries and applicability of the management system for sustainability in dentistry to establish its scope. When determining this scope, the dental service organization shall consider:

- (1) The external and internal issues referred to in 5.1,
- (2) The requirements referred to in 5.2, and
- (3) The type and extent of dental services offered.

5.1.3.2 The scope shall be available as documented information.

5.2 *Management System for Sustainability in Dentistry*—The dental service organization shall establish, implement, maintain, and continually improve a management system for sustainability in dentistry, including the processes needed and their interactions, in accordance with the requirements of this practice.

5.3 *Leadership and Commitment*—The leadership shall ensure that the defined principles of sustainable development are reflected and communicated in its policy. They shall also ensure that the vision's delivery leads to long-term success of the dental service organization. Top management shall demonstrate leadership and commitment with respect to the sustainable dentistry management system by:

5.3.1 Ensuring that the sustainability policy and objectives are established and are compatible with the strategic direction of the dental service organization;

5.3.2 Ensuring that the integration requirements of the management system for sustainability in dentistry requirements are integrated into the dental service organization's business processes;

5.3.3 Ensuring that the appropriate financial, human, and organizational resources needed for the management system for sustainability in dentistry are available;

5.3.4 Communicating throughout the importance of effective management of sustainability in dentistry and conforming to organization the importance of using the management system for sustainability in dentistry requirements throughout the organization; effectively and conforming to its associated requirements;

5.3.5 Ensuring that the management system for sustainability in dentistry achieves its intended outcome(s);

5.3.6 Directing and supporting persons to contribute to the effectiveness of the management system for sustainability in dentistry;

5.3.7 Promoting continual improvement; and

5.3.8 Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

5.4 *Organizational Roles, Responsibilities, Account-*

abilities, and Authorities—Top management shall ensure that respective responsibilities, accountabilities, and authorities for relevant roles to realize its sustainability policy and achieve its objectives are assigned and communicated within the dental service organization. Top management shall assign the responsibility and authority for:

5.4.1 Requirements of this practice, and

5.4.2 Reporting on the performance of the management system for sustainability in dentistry to top management.

5.5 *Planning:*

5.5.1 *Actions to Address Risks and Opportunities:*

5.5.1.1 When planning for the management system for sustainability in dentistry, the dental service organization shall consider, assess, and prioritize the issues referred to in 5.1, the requirements referred to in 5.2, and determine the risks and opportunities that need to be addressed to:

- (1) Give assurance that the management system for sustainability in dentistry can achieve its intended outcome(s);
- (2) Prevent or reduce undesired effects;
- (3) Enhance desired business outcomes; and
- (4) Achieve continual improvement.

5.5.1.2 When determining the risks and opportunities that need to be addressed, the dental service organization shall also include considerations for risks associated with organizational integrity, inclusivity, transparency, and stewardship as well as opportunities related to the practice of evidence-based dentistry.

5.5.2 The dental service organization shall plan:

5.5.2.1 Actions to address these risks and opportunities;

5.5.2.2 How to integrate and implement the actions into its management system for sustainability in dentistry processes; and

5.5.2.3 How to evaluate the effectiveness of these actions and develop corresponding countermeasures.

5.5.3 Documented information shall be retained on the outcomes of planning for the management system for sustainability in dentistry.

5.6 *Sustainability in Dentistry Objectives and Planning to Achieve Them:*

5.6.1 The dental service organization shall establish sustainability objectives at relevant functions and levels. The sustainability in dentistry objectives shall:

5.6.1.1 Be consistent with the sustainability in dentistry policy,

5.6.1.2 Be measurable (if practicable),

5.6.1.3 Take into account applicable legal and other requirements as well as technical feasibility,

5.6.1.4 Be measurable and monitored,

5.6.1.5 Be communicated, and

5.6.1.6 Be updated as appropriate.

5.6.2 The dental service organization shall retain documented information on the sustainability in dentistry objectives. When planning how to achieve its sustainability in dentistry objectives, the dental service organization shall determine:

5.6.2.1 What will be done,

5.6.2.2 What resources will be required,

5.6.2.3 Who will be responsible,

5.6.2.4 When it will be completed, and

5.6.2.5 How the results will be evaluated.

5.7 *Support:*

5.7.1 *Resource*—The dental service organization shall determine and provide the resources needed for the establishment, implementation, maintenance, and continual improvement of the management system for sustainability in dentistry and to demonstrate enhanced performance.

5.7.2 *Competence*—The dental service organization shall:

5.7.2.1 Determine the necessary competence of person(s) doing work under its control that affects its sustainability performance;

5.7.2.2 Ensure that these persons are competent on the basis of appropriate education, training, or experience;

5.7.2.3 Where applicable, take actions to acquire the necessary competence and evaluate the effectiveness of the actions taken; and

5.7.2.4 Retain appropriate documented information as evidence of competence.

5.7.3 *Awareness*—Persons doing work under the dental service organization’s control shall be aware of:

5.7.3.1 The sustainability in dentistry policy;

5.7.3.2 Their contribution to the effectiveness of the management system for sustainability in dentistry, including the benefits of improved sustainability performance; and

5.7.3.3 The implications of not conforming ~~with~~to the management system for sustainability in dentistry requirements.

5.7.4 *Communication*—The dental service organization shall determine the need for internal and external communications relevant to the management system for sustainability in dentistry, including:

5.7.4.1 ~~On what~~What it will communicate,

5.7.4.2 When to communicate,

5.7.4.3 With whom to communicate,

5.7.4.4 How to communicate, and

5.7.4.5 Why the communication takes place.

5.7.5 *Documented Information:*

5.7.5.1 *General*—The dental service organization’s management system for sustainability in dentistry shall include:

(1) Documented information required by this practice;

(2) Documented information required by pertinent certification, accreditation, and regulation; and

(3) Documented information determined by the dental service organization as being necessary for the effectiveness of the management system for sustainability in dentistry.

5.7.5.2 *Creating and Updating*—When creating and updating documented information, the dental service organization shall ensure appropriate:

(1) Identification and description (for example, a title, date, author, or reference number),

(2) Format (for example, language, software version, graphics) and media (for example, paper, electronic), and

(3) Review and approval for suitability and adequacy.

5.7.5.3 *Control of Documented Information:*

(1) Documented information required by the management system for sustainability in dentistry and by this practice shall be controlled to ensure:

(a) It is available and suitable for use where and when it is needed, and

(b) It is adequately protected (for example, from loss of confidentiality, improper use, or loss of integrity).

(2) For the control of documented information, the dental service organization shall address the following activities, as applicable:

- (a) Distribution, access, retrieval and use;
- (b) Storage and preservation, including preservation of legibility;
- (c) Control of changes (for example, version control); and
- (d) Retention and disposition.

(3) Documented information of external origin determined by the dental service organization to be necessary for the planning and operation of the management system for sustainability in dentistry shall be identified, as appropriate, and controlled.

5.7.6 *Dental Service Operation:*

5.7.6.1 *Operational Planning and Control*—The dental service organization shall plan, implement, and control the processes needed to meet requirements and implement the actions determined in 5.6.1 by:

- (1) Establishing criteria for the processes;
- (2) Implementing control of the processes in accordance with the criteria; and
- (3) Keeping documented information to the extent necessary to have confidence that the processes have been carried out as planned.

5.7.6.2 *Change Management:*

(1) The dental service organization shall plan for and manage changes to its management system for sustainability in dentistry to ensure they do not cause or lead to undesired business performance, including:

- (a) Changes to work processes, procedures, equipment, organizational structure, staffing, as well as scale and extent of dental services offered;
- (b) Changes in newly established knowledge, techniques, or technology; and
- (c) Changes to legal or other requirements.

(2) The dental service organization shall control planned changes and review the consequences of unintended changes, taking action to mitigate any adverse effects as necessary before implementation of changes. The dental service organization shall ensure that outsourced processes are controlled.

5.7.6.3 *Procurement of Dental Equipment, Services, and Supplies:*

(1) The dental service organization shall ensure procured equipment, services, and supplies conform to specified procurement requirements and sustainability criteria. When procuring dental equipment, services, and supplies, the dental service organizations shall:

- (a) Define and establish procurement requirements and sustainability criteria consistent with the outcomes of planning (see 5.5) and objectives (see 5.6);
- (b) Communicate to suppliers that procurement decision is partly decisions are evaluated on the basis of suppliers' sustainability performance; and
- (c) Evaluate and select suppliers based on their ability to furnish dental equipment, service, and supplies in accordance with the procurement requirements and sustainability criteria.

(2) Documented information of established procurement requirements and criteria as well as the results of evaluation and any consequent procurement decision derived shall be maintained.

5.7.7 *Performance Evaluation:*

5.7.7.1 *Monitoring, Measurement, Analysis, and Evaluation*—The dental service organization shall determine:

- (1) What needs to be monitored and measured;
- (2) Who will be responsible for monitoring, measurement, analysis, and evaluation;
- (3) The methods for monitoring, measurement, analysis, and evaluation, as applicable, to ensure valid results;
- (4) When the monitoring and measuring shall be performed; and
- (5) When the results from monitoring and measurement shall be analyzed and evaluated.

5.7.7.2 The dental service organization shall retain appropriate documented information as evidence of the results. The dental service organization shall evaluate the sustainability performance and the effectiveness of the management system for sustainability in dentistry.

5.7.8 *Internal Audit*—The dental service organization shall conduct internal audits at planned intervals to provide information on whether the management system for sustainability in dentistry:

5.7.8.1 *Conforms to:*

- (1) The organization's own requirements pertain to sustainability in dentistry, and