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American Dental Association
Technical Report No. 1055

Computer Hardware and Software Guidelines for Dental Offices

A Technical Report prepared by the American Dental Association and registered with ANSI.

ADA American Dental Association®

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AMERICAN DENTAL ASSOCIATION TECHNICAL REPORT NO. 1055 FOR COMPUTER HARDWARE AND SOFTWARE GUIDELINES FOR DENTAL OFFICES

The Council on Dental Practice of the American Dental Association has approved American Dental Association Technical Report No. 1055 for Computer Hardware and Software Guidelines for Dental Offices. Working Groups of the ADA Standards Committee on Dental Informatics (SCDI) formulate this and other specifications and technical reports for the application of information technology and other electronic technologies to dentistry's clinical and administrative operations. The ADA SCDI has representation from appropriate interests in the United States in the standardization of information technology and other electronic technologies used in dental practice. The ADA Standards Committee on Dental Informatics confirmed approval of ADA Technical Report No. 1055 on January 13, 2011.

Publication of this technical report that has been registered with ANSI has been approved by the American Dental Association, 211 E. Chicago Ave., Chicago, IL 60611. This document is registered as a technical report according to the *Procedures for the Registration of Technical Reports with ANSI.* This document is not an American National Standard and the material contained herein is not normative in nature. Comments on this document should be sent to the American Dental Association, 211 E. Chicago Ave., Chicago, IL 60611.

This technical report was prepared by SCDI Working Group 10.11 on Guidelines for Hardware and Software in Dental Practice.

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FOREWORD

(This foreword does not form a part of American Dental Association Technical Report No. 1055 for Computer Hardware and Software Guidelines for Dental Offices).

American Dental Association Technical Report No. 1055 for Computer Hardware and Software Guidelines for Dental Offices combines and replaces two previously published reports: ADA Technical Report No. 1012-2002 for Computer Hardware Recommendations for Dental Offices and ADA Technical Report No. 1004-2004 for Computer Software Performance for Dental Practice Software.

In 1992, there was interest in the standardization of clinical information systems related to electronic technology in the dental environment. After evaluating current informatics activities, a Task Group of the ANSI Accredited Standards Committee MD156 (ASC MD156) was created by the ADA to initiate the development of technical reports, guidelines, and standards on electronic technologies used in dental practice. In 1999, the ADA established the ADA Standards Committee on Dental Informatics (SCDI). The ADA SCDI is currently the group that reviews and approves proposed American National Standards (ANSI approved) and technical reports developed by the standards committee's working groups. The ADA became an ANSI accredited standards organization in 2000.

The scope of the ADA SCDI is:

To promote patient care and oral health through the application of information standards and technology to dentistry's clinical and administrative operations; to develop standards, specifications, technical reports, and guidelines for: components of a computerized dental clinical workstation; electronic technologies used in dental practice; and interoperability standards for different software and hardware products which provide a seamless information exchange throughout all facets of healthcare.

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1   SCOPE

The purpose of this technical report is to outline the features of hardware and software for dental practice management systems and propose guidelines for selection for their optimal utilization in dental offices.

2   HARDWARE

Computer hardware requirements for dental offices can vary widely due to the large array of devices available at the time of purchase. The design of computer hardware and the materials used in their manufacture are constantly changing.

Due to the environmental impact of the digital age, it is important that the user check local codes and regulations. Users should consider environmental concerns when purchasing or upgrading equipment including the adoption of more environmentally friendly "green" technologies. Users must comply with the Federal Resource Conservation and Recovery Act (RCRA) as well as other federal, state and local regulations on disposal of equipment containing hazardous materials.

When purchasing devices that will be used in clinical settings, users should ensure that devices such as keyboards and the computer mouse can be either barrier protected or disinfected to avoid transmission of infectious organisms. Users may also consider the use of voice activated devices and other "hands-free" approaches to enable aseptic use. See *ADA Technical Report No. 1006 for Infection Control for Dental Information Systems.*[1]

Dental offices can be divided into two categories:
Dental offices using only patient management software, accounting, spreadsheet and/or word processing software; and dental offices using integrated technological products, such as digital radiography, computer-based intraoral imaging (intraoral cameras) and/or cosmetic imaging.

The types of software applications used in dental offices range from simple accounting programs to highly sophisticated imaging and design systems for implants and cosmetic dentistry. Users should work closely with computer hardware suppliers to ensure that their system hardware is optimized to meet their current and anticipated future needs.

These recommendations promote the use of off-the-shelf computer hardware and devices as opposed to proprietary, closed systems, which will most likely increase cost of ownership over time. Purchasing industry standard hardware also allows the most freedom of choice in choosing both a supplier and service provider, who will be able to maintain the computer hardware over its useful lifetime.

A glossary of technical terms is included at the end of this document.

NOTE (1): Please refer to the software vendor first to determine the specific hardware specification for the software to be utilized. The system that is specified should be based on the highest minimum requirements of ALL software that will be utilized.

NOTE (2): Hardware technology is constantly changing. The technical specifications recommended in this report represent current computer hardware industry standards as of the date of publication. This report will be revised periodically to provide updated technical details. For the most current hardware specifications at any time, system managers are advised to consult hardware manufacturers' websites.

Computer hardware includes the following components, varying combinations of which are included in both workstation computers and server computers in a network.