

American Dental Association
Technical Report No. 1031

Internet Security Issues for Dental Information Systems

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**AMERICAN DENTAL ASSOCIATION TECHNICAL REPORT NO. 1031 FOR INTERNET SECURITY
ISSUES FOR DENTAL INFORMATION SYSTEMS**

The Council on Dental Practice of the American Dental Association has approved American Dental Association Technical Report No. 1031 for Internet Security Issues for Dental Information Systems. Working Groups of the ADA Standards Committee on Dental Informatics (SCDI) formulate this and other technical reports and specifications 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. Approval of ADA Technical Report No. 1031 was confirmed by the ADA SCDI on April 12, 2004.

The ADA SCDI thanks Norman Schreiber, HIPAASeminar.com, Phoenix, MD, as chairman of Working Group 10.3 for Dental Information Systems Security and Safeguards for leading the development effort.

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FOR INTERNET SECURITY ISSUES FOR DENTAL INFORMATION SYSTEMS**

FOREWORD

(This foreword does not form a part of Proposed American Dental Association Draft Technical Report No. 1031 for Electronic/Digital Signatures Uses in Dentistry).

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 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."

This technical report was prepared by SCDI Working Group 10.3 for Dental Information Systems Security and Safeguards. The SCDI Working Group 10.3 chairman is Norman Schreiber. SCDI Working Group 10.3 prepared this report at the request of SCDI Subcommittee 10 for Dental Informatics Architecture and Devices (Scott Trapp, Chairman).

AMERICAN DENTAL ASSOCIATION DRAFT TECHNICAL REPORT NO. 1031 FOR INTERNET SECURITY ISSUES FOR DENTAL INFORMATION SYSTEMS

SCOPE

The Scope of this Technical Report is to create security awareness and education for the dental practitioner associated with a connection to the Internet. The Internet has proven to be an effective means of communication, yet its vulnerability to interception raises issues of privacy, authentication and integrity of the communicated message. Therefore, data security is of utmost importance to users of dental information systems

Because of the personal and private nature of health record, the dental practitioner needs to understand the security issues associated with "data at rest" and "data in transit." This paper is intended to explain security concepts and the risks associated with the maintenance of data in storage and transit, and over an Internet connection.

INTRODUCTION

Whether health care businesses will make use of the Internet is no longer debatable. Internet use among all businesses is growing at accelerating rates. Even small businesses have jumped on the Internet bandwagon, with use climbing from 35 percent in 1996 to a projected 76 percent by 2003.¹

The Internet is a global communications system that allows users to obtain information at an unprecedented scale and scope. Its effects on healthcare systems are only beginning to be realized. E-mail traffic still makes up the largest portion of Internet use by small business, but electronic commerce and transactional applications, such as electronic claims, are on the increase as well. The most successful emerging business model for the Internet is as an additional tool for business-to-business transactions.

An estimated 96,000 dentists (66.8 percent) had a computer in their office in 1997.² The percentage of dentists who have computers at work increased from 11.0 percent in 1984 to 79.5 percent in 1997. Modem availability has increased from 61.7 percent in 1995 to 69.1 percent in 1997.³ The percentage of dentists who have computers in their practice has increased steadily since 1984. The most recent rise being 5.6 percent from 1997 – 2000.⁴

In dentistry, dental team members routinely communicate with external entities such as other dentists, healthcare providers, patients, payers and dental suppliers. Patient records, textbooks, journals, product information and colleagues serve as information resources. In many instances, information exchanged to effect a transaction never takes paper form. Computer-based information also can be utilized differently than its paper counterpart. For example, computers can "read" digital information and transform the information or take programmable actions based on the information. Information stored as bits rather than as atoms of ink and paper can travel near the speed of light, and may be duplicated without limit or significant cost. The Internet adds a new and powerful resource to the dental office by improving efficiency and accuracy of communication, and by enabling access to current and relevant information for supporting patient care.⁵

A 1998 study found that dental professionals obtained diagnostic and product information, discussed clinical cases, and communicated with patients on the Internet.⁶ Each time a patient