



American National Standard/
American Dental Association
Standard No. 1067

Electronic Dental Record System Standard Functional Requirements

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**AMERICAN NATIONAL STANDARD/AMERICAN DENTAL ASSOCIATION STANDARD NO. 1067
FOR ELECTRONIC DENTAL RECORD SYSTEM STANDARD FUNCTIONAL REQUIREMENTS**

The Council on Dental Practice of the American Dental Association has approved American Dental Association Standard No. 1067 for Electronic Dental Record System Standard Functional Requirements. Working Groups of the ADA Standards Committee on Dental Informatics (SCDI) formulate this and other standards 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 standard was forwarded to the American National Standards Institute with a recommendation that the standard be approved as an American National Standard. Approval of ADA Standard No. 1067 as an American National Standard was granted by the American National Standards Institute on May 6, 2013.

This standard was prepared by a task group of ADA SCDI Working Group 11.1 on Standard Clinical Data Architecture. The ADA SCDI thanks the members of the task group and the organizations with which they were affiliated at the time the specification was developed.

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FOREWORD

(This Foreword does not form a part of ANSI/ADA Standard No. 1067 for Electronic Dental Record System Standard Functional Requirements.)

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:

"The ADA SCDI shall develop informatics standards, technical reports and guidelines and interact with other entities involved in the development of health informatics standards aimed at implementation across the dental profession.

The taskgroup conveys special thanks to the ADA's Patrick Cannady and Janeen Walls for their valued support in defining these requirements.

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1.0 Introduction (Informative)

Dentistry shares a common heritage with Medicine including the documentation of our patients' health conditions, diagnoses, and treatments. A century ago our practitioners created handwritten notes about individual cases in laboratory-style notebooks using various notations, shorthand script and ciphers. The structure and content of these notes were defined by each practitioner to fit their personal style and practice.

Early in the 20th Century both professions began to formalize the nature of the clinical records we maintained. In 1919, the American College of Surgeons¹ specified the information to be contained in the patient's medical record as:

- Patient identification data;
- The chief complaint;
- Personal and family history;
- History of the present illness;
- Results of the physical examination;
- Results of consultations, radiologic examination and clinical laboratory;
- A provisional or working diagnosis;
- Medical and surgical treatments provided;
- Progress notes;
- Histopathology – gross and microscopic findings;
- The final diagnosis;
- Patient condition on completion of care;
- Follow-up notes; and
- Autopsy findings in the event of death.

Likewise, G. V. Black², among others, similarly formalized the notation used in documenting dental care around a blended text-graphic format. Black linked the record structure and notation directly to the examination, diagnosis, treatment planning, and treatment processes. Vendors subsequently published a variety of paper dental record charts, forms, and folders, presenting variations on a text-graphic representation of oral structures, examination findings, and treatments proposed and performed. This variety presented the practicing dentist with a range of document styles and formats from which they could select whatever best fit their professional preferences.

The first computer applications in dentistry were public health studies of populations in the late 1940's. In 1948, Klein and Kramer reported using Hollerith-type punch card technology to record the results of dental examinations.³ These cards could record ten data items for deciduous and permanent teeth. As computer technology evolved and more capable main-frame systems became available, greater amounts of epidemiology data could be recorded and maintained, and increasingly sophisticated statistical analyses could be performed. By 1968, data entry evolved from punch card to mark-sense to optical character recognition technology.⁴ Such epidemiology applications were well suited to the large, mainframe systems then available.⁵ At that time the potential for computer use in dental business and clinical applications began to be explored.^{6,7,8,9,10,11} With the advent of microcomputers in the late 1970s, computing capability became

¹ Minimum Standards, 1919, Bulletin of the American College of Surgeons. 8/4. 1924.

² Black, Arthur D., G.V. Black's Work on Operative Dentistry, Vol. 1. Pathology of the Hard Tissues of the Teeth, Oral Diagnosis. 8th edition, and previous editions. Medico-Dental Publishing Company, 1948. Pages 59-76 and following.

³ Klein, H. and M. Kramer. A Dental Examination Record Form for Statistical Machine Tabulation. J. Dent. Res. 27:170, 1948.

⁴ Pennell, E. H. and S. S. Herman. A Mark Sense Card for Recording Dental Examination Findings. J. Dent. Res. 31:113, 1952.

⁵ Marthaler, T. M., Bandi, A. And M. Steiner. Computers in Preventive Dentistry. Int. Dent. J. 30:201, 1980.]

⁶ Mauch, R. S. Automation Comes to the Dental Office, JADA 68:70, 1964.

⁷ Cobin, A. S. An Uncomplicated Method for Automating Endodontic Treatment Records. Oral Surg. 22:519, 1966.