

American Dental Association
Technical Report No. 1054

Electronic Dental Laboratory Prescription Forms

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

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AMERICAN DENTAL ASSOCIATION TECHNICAL REPORT NO. 1054 FOR ELECTRONIC DENTAL LABORATORY PRESCRIPTION FORMS

The Council on Dental Practice of the American Dental Association has approved American Dental Association Technical Report No. 1054 for Electronic Dental Laboratory Prescription Forms. 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. 1054 on January 4, 2012.

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.

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FOREWORD

(This Foreword does not form a part of American Dental Association Technical Report No. 1054 for Dental Laboratory Prescription Forms).

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 specifications, technical reports and guidelines and interact with other entities involved in the development of health informatics standards aimed at implementation across the dental profession.

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SCOPE

The technical report presents the types of data and electronic format necessary to be included on an electronic dental laboratory prescription. The goal of this report is to address the need for electronic transmission of patient information from the dental practitioner to the outsourced dental laboratory with the necessary security and interoperability.

INTRODUCTION

The Internet has proven to be an effective means of communication. Therefore, providing necessary prescriptions in electronic format is the next step in securing a patient's data and providing restoration specific information, including required materials, procedures and protocols to accompany off site restoration fabrication including electronic impressions.

Because of the personal and private nature of health records, the dental practitioner needs to understand the security issues associated with "data at rest" and "data in transit." This paper is not intended to explain security concepts and the risks associated with the maintenance of data in storage and transit, and over an internet connection. The ADA Standards Committee on Dental Informatics (ADA SCDI) has published a series of technical reports that provide dental practitioners with guidelines in addressing issues of security of data in storage and transmission over the Internet.¹⁻⁷

This technical report provides additional guidelines for the format, content and security of patient data disseminated offsite to the outsourced dental laboratory. The recommendations provided herein are designed to be technology-neutral and to be scalable to address the needs of both large and small facilities.

This document may provide information regarding legal implications of the security and privacy regulations. This document does not provide legal advice and covered entities must work with their legal staff to address appropriate requirements. This document may serve as a tool to expedite an understanding of the necessary legal actions needed to address requirements, as well as federal and state legislation, as security and privacy has an impact on many aspects of dentistry.

REFERENCED STANDARDS

The following documents contain provisions that, through reference in this text, constitute provisions of this document.

American Dental Association Technical Report No. 1041: *Content of Electronic Dental Laboratory Prescriptions*

CDT 2011-2012, *The ADA Practical Guide to Dental Procedure Codes*

ISO/ANSI/ADA 3950:2010, *Dentistry-Designation System for Teeth and Areas of the Oral Cavity*

(ADA Technical Reports, ISO dental standards and CDT are available from the American Dental Association, 211 E. Chicago Ave., Chicago, IL 60611 or www.adacatalog.org).

Digital Imaging and Communications in Medicine (DICOM) Version 3.0

(DICOM is available from the National Electrical Manufacturers Association, 1300 N. 17th St., Rosslyn, VA 22209 or <http://dicom.nema.org>).

HL7 Version 2.5

(Health Level Seven is available from Health Level Seven (HL7), 3300 Washtenaw Ave., Suite 227, Ann Arbor, MI 48104 or www.hl7.org).

ISO 17090:2008, *Health informatics-Public key infrastructure, Parts 1-3*

ISO TS 22220, *Health informatics-Identification of subjects of health care*

(ISO Standards are available from the American National Standards Institute, 25 W. 43rd St., New York, NY 10036 or www.ansi.org).

Open Exchange Dental Interoperability Group (OXDIG)

(<http://www.oxdig.org>)

DEFINITIONS

For the purposes of this technical report, the following terms and definitions shall apply.

A Terms For Fixed Restorations

Alloys

High noble – Those metals elements that resist oxidation, tarnish and corrosion during heating, casting, or soldering and when used intra-orally and having gold or elements of the platinum group as principal ingredient(s) of a combined percentage of these elements.

Noble - Those metals elements that resist oxidation, tarnish and corrosion during heating, casting, or soldering and when used intra-orally and having gold or elements of the platinum group as principal ingredient(s) of a combined percentage of these elements.

Low noble – Those metals elements that resist oxidation, tarnish and corrosion during heating, casting, or soldering and when used intra-orally and having gold or elements of the platinum group as principal ingredient(s) of a combined percentage of these elements.

Base alloy – An alloy composed of metals that are not noble.

Cast – To produce a shape by thrusting a molten liquid or plastic material into a mold processing the desired shape.

Casting – An object formed in a mold; forming of a casting in a mold.

Ceramics – A non-metal, non-resin organic refractory compound processed at high temperatures (600C/1112F and above) and pressed polished or milled – including porcelains, glasses, and glass

Aluminous – A ceramic material composed of a glass matrix phase with 35% or more of aluminum oxide, by volume.

Castable – A glass ceramic material combines the properties of a restoration material for function with the capability to be cast using the lost wax process.

Feldspathic – Porcelain fabricated from the natural mineral group feldspar. The material is composed of compounds of oxygen with lighter metals and nonmetals and is predominantly an amorphous matrix with one or more crystallizing phases.

Milled – The machining of proximal boxes, recesses, or other forms on a cast restoration to be used as retainers for fixed or removable prostheses.

Ceramic metal restoration, *Porcelain fused to metal (PFM)*, *metal ceramic restoration* – Restoration made of metal that has ceramic material veneered to its surface(s).

Crown $\frac{3}{4}$ - Coronal formed tooth replacement designed to cover $\frac{3}{4}$ of the coronal portion of a tooth.

Crown $\frac{7}{8}$ - Coronal formed tooth replacement designed to cover $\frac{7}{8}$ of the coronal portion of a tooth.

Crown – Resin-composite – A restoration made of a hybrid compound material that is formed in the shape of a tooth to fit a specific tooth preparation.

Crown – Full cast – Metallic restoration that covers all the surfaces of a tooth (facial, lingual, mesial, distal and occlusal or incisal).

Diagnostic wax-up – A shaping of tooth structure on a model cast showing the desired results for a post restorative process.

Full crown porcelain restorations –

Full porcelain crown (FPC) – A porcelain restoration that covers all the surfaces of a tooth usually made of feldspathic porcelain or zirconium.

Porcelain veneer – A thin bonded ceramic restoration that restores the facial surface and part of the proximal surfaces of the teeth requiring restoration.

Porcelain facing – A covering of a portion of a tooth that is made only of porcelain intended to only cover a portion of a tooth.

Porcelain jacket (PJC) – An all porcelain crown restoration, usually made of feldspathic porcelain.

Gingival moulage – A prosthesis made as a replacement for soft tissue in the mouth.

Hybrid – A conventional glass ionomer that has been modified to include methacrylate groups in liquid component. It may contain photo initiators. Setting is by an acid base reaction with light and dual cure polymerization; activation by a catalyst or a combination of curing methods. A broad category of materials including but not limited to composites, light cured composite, glass ionomers, etc.

Inlay – A fixed intra-coronal restoration; a dental restoration made outside of the oral cavity to correspond to the form of the prepared cavity, which is then luted into the tooth. (Journal of Prosthetic Dentistry, Glossary of Prosthodontic terms; 2005, page 45).

Metal collar – A band of metal circumferentially on the restoration that comes in contact at all points of the abutment / restoration interface.

Metal lingual collar – A band of metal placed at the interface of the abutment / restoration interface only on the lingual side of the restoration.

Metal occlusal contacts – A restoration made with metal on the surface where the restoration comes into contact with the antagonist arch.

Milling seat – The machining of proximal boxes, recesses, or other forms on a cast restoration to be used as retainers for fixed or removable prostheses.

Onlay – A restoration that restores one or more cusps and adjoining occlusal surfaces, or the entire occlusal surface, and retained by mechanical or adhesive means. (Journal of Prosthetic Dentistry, Glossary of Prosthodontic Terms; July 2005, page 57).

Pontic contours – Referring to the contour of the most gingival portion of a restoration replacing a missing tooth.

Ovate –The gingival shape of a tooth replacement that is convex in contour on its tissue surface, typically partially submerged in a surgically prepared soft tissue depression, and designed to appear that the pontic is emerging from the soft tissue area very similar in appearance to the natural tooth contours.

Sanitary – The gingival of a pontic that makes no contact with the residual ridge and has space between it and the tissue.

Point contact – The gingival of a pontic that makes only spot of contact with the tissue.

Ridge lap – A pontic that has a gingival contour makes contact with the height of contour of the ridge and continuing that contact over the labial ridge to fill the natural contour of the emergence profile of a natural tooth.

Socket –The gingival contour of a pontic that is contoured to fit into the soft tissue in a convex form.

Porcelain labial butt – The area of the crown tooth interface is fabricated with only porcelain on a porcelain metal restoration on the labial portion of a restoration.

Post, core and crown – A one piece form for an endodontically treated tooth that replaces the root and coronal form.

Post and core in addition to crown, indirectly fabricated– Post and core are custom fabricated as a single unit.

Post in addition to crown, indirectly fabricated – A rod like custom component designed to be inserted into a prepared root canal space so as to provide structural support, usually secured with appropriate luting agents.

Stump Shade – The primary color of a prepped abutment to be covered by a laboratory fabricated restoration.

Veneered lingual – A restoration made to cover the lingual surface of a tooth.

Terms used to prepare a crown to support or design a Removable Partial Denture (RPD)

Akers – The arm of a retentive portion of a RPD that comes across a tooth at the height of contour to engage the tip of the arm in a clasp preparation, or below the height of contour.

Back action – The arm of a retentive portion of a RPD that comes across the gingival portion of a tooth without contact then turns toward the occlusal surface of a tooth 180 degrees back across the tooth to engage a clasp preparation of a tooth.

Circumferential Clasp – A retainer that encircles a tooth by more than 180 degrees, including opposite angles and which generally contacts the tooth throughout the extent of the clasp, with at least one terminal located in an undercut area.

Clasp preparation – Inclusion in a restoration of the contours to receive the component of a clasp assembly that engages a portion of the tooth surface via an undercut for retention of remains entirely above the height of contour to act as a reciprocation element. Generally used to stabilize and retain a removable dental prosthesis (RPD).

Composite veneer – An area of a tooth to be covered with a composite material.

I bar – RPD clasp (retentive or bracing) that approaches the tooth surface from a cervical or infrabulge direction.

Porcelain coverage – The area of a restoration to be veneered with porcelain.

Pressed to alloy – A veneering material that is to be applied to a alloy usually via a lost wax process.

Pressed to Zirconia – A veneering material that is to be applied to Zirconia based material usually via a lost wax process.

Reduction coping – A covering or cap used to replicate the needed alterations of a tooth generally transferred from a cast to the oral cavity.

Resin bonded fixed prosthesis – *Resin bonded bridge* – *Maryland Bridge* – *Rochette Bridge* - *Acid etched bridge* A restoration made to be bonded to the coronal surface of a tooth. A prosthesis that is luted to a prepared or minimally prepared tooth structures, primarily enamel, which has been etched to provide mechanical retention for the resin cement, and may include a pontic(s).

Resin bonded splint – Splint made of heavy wire, fibrous resin material or/and cast metal that is bonded to labial or lingual portion of natural teeth with an acid etch technique.

Resin crown – A resin restoration that restores a clinical crown without a metal substructure.

Rest seat – The prepared recess in a tooth or restoration created to receive the occlusal, incisal, cingulum, or lingual rest.

Soft tissue model – The gingival portion of a working cast that is made of a soft material to replicate the malleability of the gingival tissue in the mouth and to allow access to a deep preparation allowing for contours of a restoration to allow for the patients tissue, or for access to an implant component(s) interface.

Tooth contours

Square – Where the mesial distal and incisal contours of a tooth are mostly square in shape.

Tapered – Where the mesial distal and incisal contours of a tooth are mostly contoured with the widest mesial distally at the incisal most portion of the tooth.

Oval – Where the mesial distal and incisal contours of a tooth are mostly rounded in shape.

Open embrasures – Where the spaces between at the gingival most area has space between the teeth.

Closed embrasures – Where the spaces between at the gingival most area has no opening or spaces.

Emergence profile angle – The angle at which the tooth emerges from the tissue moving toward the coronal portion of the tooth.

Gingival tissue porcelain – Porcelain material shaded to mimic the color of gingival tissue.

Guide planes – Contours of a tooth shaped to be parallel with contours of other teeth, generally to serve as support for a RPD.

B Terms for removable restorations

Altered cast – A final cast or model that is revised in part before processing a denture base.

Back action clasp – The arm of a retentive portion of a RPD that comes across the gingival portion of a tooth without contact then turns toward the occlusal surface of a tooth 180 degrees back across the tooth to engage a undercut preparation in the tooth or below the height of contour of the tooth.

Base fracture – An area of failure in the substance of which a denture base may be made, such as acrylic resin, vulcanite, polystyrene or metal.

Cast frame (removable partial denture) – A framework made via the lost wax technique of a cast alloy used as reinforcement and a retentive structure for a partial denture.