# Section 16 Dental Laboratories

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Dental Laboratories

Policies and Procedures for Central Dental Laboratory Services

Purpose

1. To assist UIC College of Dentistry students, faculty and staff in obtaining the highest standards of laboratory services for our patients.

2. To encourage and enhance knowledge, learning and collaboration between faculty, students, staff and commercial laboratories.

3. To utilize existing electronic technology to enhance laboratory tracking and patient care.

4. To provide data to assess quality assurance of all stages of laboratory work.

5. To electronically centralize and track laboratory financial data.

Scope

This policy shall apply to all dental and orofacial laboratory services provided by or contracted through the College of Dentistry by any College of Dentistry patient care provider and shall be in compliance with the State of Illinois Dental Practice Act.

Laboratory Hours and Information

The hours of operation for the Central Dental Laboratory (Room 514) are 8:45 - 11:25 a.m., 12:30 p.m. – 2:00 p.m., and 3:00 p.m. - 4:25 p.m. The telephone number is (312) 996-1894.

Procedures

1. All laboratory prescriptions will be generated electronically through the electronic patient record system (Axium).

   a. The provider must be personally logged onto the electronic patient record.

   b. All required text entries must be completed online by the provider.
2. All laboratory prescriptions will be printed using the electronic patient record printing system.
   a. Drawings will be completed on the printed form.
   b. The provider or the licensed supervisor (for the predoctoral program) must sign the printed form.

3. All materials and the printed prescription form will be delivered to the UIC College of Dentistry’s Central Dental Laboratory (Room 514) along with any special shipping instructions.

4. The UIC College of Dentistry laboratory will enter necessary tracking information.

5. The UIC College of Dentistry laboratory will electronically notify the provider and the appropriate clinic of the return of the materials for pick up by the provider or clinic through the Axium e-mail system.

Patient Accounts

1. Graduate Program Provider and Predoctoral Program Provider
   a. The Total Patient Balance (The patient account balance plus any completed but unapproved procedure, or fee associated procedure step) will be summed and printed on the UIC College of Dentistry prescription form in the lower left hand box titled Total Patient Balance.
   b. If the above sum is greater than $100.00 the laboratory work will not be authorized for shipment.

Selection and Authorization of Laboratory

1. Faculty/DSP Provider
   a. The faculty member provider may select any licensed dental laboratory in the United States for approval by the Associate Dean for Clinical Affairs.
   b. The laboratory must be an approved service, as evidenced by an existing University purchase order, and placed in the electronic laboratory database before sending work.
2. Graduate Program Provider

   a. A graduate student may only use those laboratories authorized by the Department Head and/or Program Director and approved by the Associate Dean for Clinical Affairs.
   b. The laboratory must be an approved service, as evidenced by an existing University purchase order, and placed in the electronic laboratory data base before sending work.

3. Predoctoral Program Provider

   a. A predoctoral student may only use those laboratories authorized by the Director of Central Dental Laboratory in consultation with the Managing Partners and approved by the Associate Dean for Clinical Affairs.
   b. The laboratory must be an approved service, as evidenced by an existing University purchase order, and placed in the electronic laboratory data base before sending work.

Contract Laboratory Notification and Payment Policy

1. In order to be an approved service the laboratory must have a UIC Purchase Order issued by the Office of Business and Financial Services.
2. Each authorized laboratory will receive a copy of this policy statement and a sample UIC College of Dentistry prescription form.
3. No work will be sent to the laboratory until the College of Dentistry is in receipt of a written acknowledgement from the laboratory that it has read and understood this document.
4. There will be authorization for payment of invoices only for work that has been prescribed on the UIC College of Dentistry prescription form, performed by a College of Dentistry authorized laboratory and shipped and received through the College of Dentistry’s central laboratory.
5. Work received by the College of Dentistry laboratory from a non-authorized laboratory, whether or not a UIC College of Dentistry prescription form was used, will be returned to sending laboratory with instructions to send the work to the listed provider along with an invoice addressed to the provider.
6. Work shipped by or sent directly to a College of Dentistry provider, whether or not to an authorized laboratory, and whether or not on a UIC College of Dentistry prescription is the financial responsibility of the provider.
Additional Fees

For all procedures involving a laboratory component, the patient must be informed of any additional cost for special laboratory procedures during treatment plan presentation and consent to pay the required fee(s). The laboratory fee and metal fee for most fixed and removable prosthodontic procedures is incorporated in the procedure fee as listed in the Axium Fee Guide. The following procedures incur additional cost to the patient:

1. Porcelain butt margins for metal-ceramic restorations
2. Masel crowns
3. Facings and acrylic pontics
4. Full palatal coverage for partial dentures
5. Wrought wire clasps for partial dentures
6. More than three clasps on a partial denture
7. Precision attachments for fixed and/or removable prostheses
8. Components for implant supported prostheses
9. Any custom materials needed to fabricate a prosthesis that would not normally be included

Some of the fees for the above procedures are fixed, but others are variable. Please consult the Axium Fee Guide or consult with the Director of Central Dental Laboratory to determine exact fees.

Ordering Denture Teeth and Masel Crowns

Denture teeth are available in the Central Dental Laboratory for students. A tooth requisition form found in Axium must be completed and printed. Students must obtain a signature from their restorative instructor. The form is then brought to the lab and the teeth dispensed. The same requirements for patient accounts apply for obtaining denture teeth (please see “patient accounts” above).

Masel crowns must be special ordered, and may take 7-10 days. Complete payment for the crowns must be made and documented in Axium before they are ordered.

Laboratory Working Schedule

The standard laboratory working schedule is listed below. Time schedules will vary depending on many factors. Technicians will inform faculty and/or students when the case is submitted if additional time will be needed. Furthermore, dental laboratories may occasionally need to extend this time due to unforeseen circumstances. In these cases, the student or doctor will receive a call or electronic
notice as soon as the Central Dental Laboratory is made aware of the situation.

**Five (5) Working Days**

Reline  
Rebase  
Model work  
Denture repair (acrylic)  
Cast pattern  
Solder PFM/bridge

**Seven (7) Working Days**

Partial denture framework  
PFM/bridge metal try-in  
Porcelain application  
Denture/partial acrylic processing  
Interim prostheses  
Night Guard  
Wax & cast post & core  
Solder partial repair

**Ten (10) Working Days**

PFM complete  
All ceramic inlays/onlays/crowns  
Composite inlays/onlays  
Ceramic veneers

**Predoctoral Program Laboratory Protocol**

The following guidelines apply to all Junior and Senior students:

1. All diagnostic casts must be poured and trimmed by the student and approved by the supervising instructor.

2. All fixed cases must have diagnostic wax-ups completed by the student and approved by the supervising instructor.

3. All fixed partial dentures must be tried in at the framework stage.

4. For denture cases, all post-dams must be carved into the master cast by the student and approved by the instructor.
REQUIRED ITEMS FOR SUBMITTING CASES TO THE LABORATORY

Removable Prosthodontics

Complete Denture

a- Mounted master casts.
b- Record base and wax rim.
c- Denture teeth.
d- Gingival acrylic shade for processing.

Removable Partial Denture Framework

a- Mounted master cast (unless opposing a full denture that has not been fabricated).
b- Master cast surveyed and tripoded (do not draw design on the master cast).
c- Diagnostic cast with framework design drawn on it.
d- Framework design drawn on the prescription.
e- Shade for tube tooth or facing.

Fixed Prosthodontics

Single Crown

a- Full arch impression.
b- Diagnostic cast, cast of the provisional or a wax-up.
c- Opposing cast.
d- Interocclusal record.
e- Custom incisal guide table for anterior restorations.

Fixed Partial Denture / Multiple Crowns

a- Full arch impression.
b- Mounted working casts.
c- Interocclusal record.
d- Mounted diagnostic cast, cast of provisionals or a wax-up.
e- Custom incisal guide table for anterior restorations.

Occlusal Guard

Mounted master casts.
Predoctoral Program Quality Assurance

Central laboratory quality assurance is an integral part of student learning and patient care. There are three phases of QA associated with laboratory work:

1. **Pre-submission:** Before submitting a case to the lab, students must:
   a. review all components of the QA Checklist located on the College of Dentistry Intranet website with their supervising instructor.
   b. review the lab prescription and all submission components with the supervising instructor. (There are guidelines for laboratory prescription writing located on the Intranet website. All students should be familiar with these guidelines.) The case is then approved on Axium as described earlier.

2. **Submission:** All cases will be reviewed by a laboratory administrator, appointed by the Department Head and Director of Central Dental Laboratory. If an appropriate component of the QA checklist is missing, or if there is a problem with the case that would compromise patient care, the case will be returned at the laboratory administrator’s discretion for correction. The laboratory administrator will provide the student and supervising faculty with suggestions for correction via a QA checklist. After corrections are made, the case is resubmitted with the signature of the supervising faculty on the QA form.

3. **Case Return:** Upon return from the lab, student and faculty will complete a QA form by discussing the quality and disposition of the returned prosthesis. These forms are available in Axium.

All submission and case return QA forms are available to the Associate Dean of Clinical Affairs, the Restorative Department Head, Director of Central Dental Laboratory, the Managing Partners and Dental Laboratories for quarterly review and assessment.

**Infection Control Policies and Procedures**

The College Infection Control Manual and the departmental Infection Control Policies and Procedure Manual stipulate that all dental impressions, prostheses, and other items that are transported to the Central Dental Laboratory (CDL) should be disinfected by the student BEFORE turning the items in to the laboratory technicians. As an additional precaution to insure the health and safety of all laboratory technicians, administrators, students and patients, every item entering the central dental laboratory should also be disinfected in the lab prior to
being handled. The Centers for Disease Control and Prevention (CDC) recommend that a chemical germicide with at least an intermediate level of strength be used on all laboratory materials. In order to minimize the risk of cross contamination, there will be separate receiving and dispensing areas. In addition, all cases being returned to students should be disinfected prior to dispensing. This will virtually eliminate the risk of any cross-contamination of infectious microorganisms to the students, instructors and patients.

As stated above, all items entering the CDL must be disinfected; however, care must be taken to insure that the disinfection procedures do not significantly alter the integrity of the cases being received. For example, an impression can be distorted if not handled with proper care. The following section provides a summary of the appropriate selection of disinfection methods that should be employed with various items. These guidelines should be followed to insure proper disinfection and to maximize the chances of a well made and well fitting prosthesis.

Impressions

Impressions must be rinsed thoroughly to remove saliva, blood and debris and then properly disinfected before being poured in the laboratory. They can be disinfected by spraying with Cavicide or immersion in any compatible disinfecting product. For immersion, zipper-closure plastic bags may be utilized. Since the compatibility of an impression material with a disinfectant varies, manufacturers' recommendations for proper disinfection should be followed. The use of a disinfectant requiring no more than 30 minutes is recommended. However, impression materials that are hydrophilic should be disinfected with a product requiring no more than 10 minutes. Disinfected impressions should be labeled as such on the plastic bag before being sent to the laboratory.

Casts, Prostheses, Wax Rims and Jaw Relation Records

All casts, fixed or removable prostheses, jaw relation records, articulators, etc. which have had patient exposure must be disinfected before their submission to the laboratory. These items should be clearly identified as to the state of disinfection. If it is clearly identified that stone casts have been disinfected, no future disinfection procedures are necessary.
The following table provides general guidelines for disinfection solutions and methods utilized during routine restorative clinical and laboratory procedures.

## Recommended Disinfection Method

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<td>A. Rinse under running tap water</td>
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<tr>
<td>B. Spray with Cavicide or immerse in appropriate disinfectant for the recommended time for tuberculocidal disinfection</td>
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<td>C. Rinse again</td>
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<td>D. Pour with stone</td>
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| STONE CASTS                                      | • Spray with Cavicide until wet OR • Immerse in diluted iodophor or hypochlorite for the recommended time for tuberculocidal disinfection |

| PROSTHESES APPLIANCES                            | • Clean properly • Rinse under running tap water • Spray with Cavicide or immerse in appropriate disinfectant for the recommended time for tuberculocidal disinfection • Rinse thoroughly again and dry • Store acrylic items in diluted mouthwash |

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## Personal Protection

Each laboratory technician must take the necessary precautions to ensure his/her safety in the laboratory. The university will supply any needed protection, which should consist of:

1. Eye protection (with side shields) should be worn while performing any laboratory work.

2. Masks should be worn while performing any laboratory work that creates aerosols and/or dust/metal particles.

3. Gloves when handling known or potentially infected materials.

These guidelines should be strictly adhered to due to the occupational risk of injury and/or contamination consistent with a dental laboratory.