

University of Oklahoma
College of Dentistry
Removable Prosthodontic Department
Guidelines

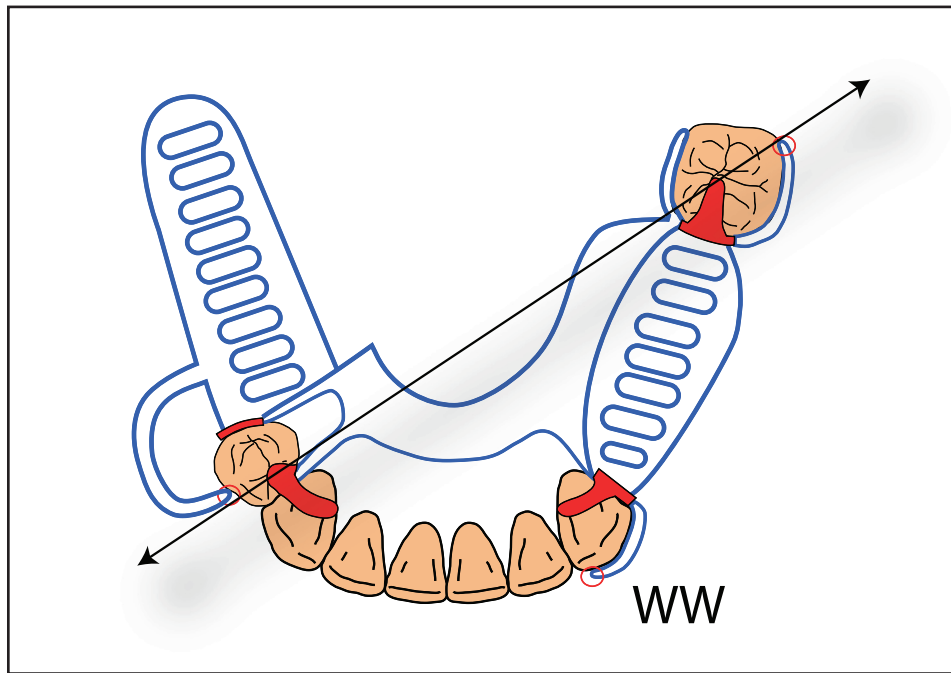


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PREFACE

First and most importantly, this review neither replaces nor supersedes the Protocol for Clinical Practice developed by the Assistant Dean for Clinical Affairs. The student should be familiar with the information presented in that manual. It contains the general guidelines for all clinical activities. This review contains additional information specific to the RPD clinic and minimum clinical requirements; it is intended as a helpful supplement.

This is not meant to be a book of “rules.” It is meant to be a guide with helpful hints and strategies for coping with frequent clinical problems. Most problems fall into basic categories, such as patient management, finances, clinic utilization, preparation, organization, and communication. It is hoped that by using actual examples of recurring clinical problems and suggesting possible solutions, a great deal of time can be saved. Positive examples of how successful students manage their clinic time are presented. Finally, a short review of special RPD clinical procedures is provided.

Our emphasis is on creating a good learning environment where students can provide quality care for each patient, while learning the wide variety of skills and attitudes necessary to become a beginning dentist. The key is for you to do the quantity and quality of work necessary to produce consistently satisfactory clinical outcomes for your patients. As you gain clinical experience, you will be given more responsibility and expected to work more efficiently and independently.

Attendance and clinical activity are critical for your professional development. If your clinical attendance falls below 75%, your professional development will be lacking, and you may fail to reach the standard required for promotion or graduation. To develop your skills and judgment, you must treat patients. Your self-motivation is a key element in this process.

What is professional development?

Professional development is the continuing acquisition and enhancement of knowledge, skills, judgment, and attitudes, through study, practice, experience, and reflection, needed to treat patients in an ethical, compassionate, and effective manner. Professional development begins in dental school and never ends; it is part of a commitment to lifelong learning, your patients' welfare, and advancement of your profession. The choice you made to become a professional person has obligations that will require sacrifices, choices, and commitments.

If you have not acquired the knowledge, skills, and attitudes to handle the increasing responsibilities necessary to manage and treat your patients effectively, you are not developing professionally. Cardinal signs of lack of professional development are blaming others for your problems, lack of clinical progress, poor attendance, and avoidance of responsibility. If you find yourself unable or unwilling to fulfill your responsibilities to your patients, you should seek advice immediately. As an adult student, you must take action to address your problems.

CLINIC HOURS

Removable prosthodontics clinic hours are from 9:00 a.m. to 12:00 noon and from 1:00 p.m. to 4:00 p.m. as posted on the clinic schedule. A new schedule is posted each semester in the burgundy clinic and in the RPD department.

Emphasize the importance of being on time to your patients and try to start treatment within the first 15 minutes of each appointment. Our observations indicate that most RPD treatment begins 30 minutes after clinic starts. Prepare for each clinic appointment by reviewing reference material and seeking consultation outside of normal clinic hours. Have materials, articulator, surveyor, mounting rings, tooth order forms, burs, encounter slips, competency forms, and remount casts ready at the beginning of the appointment.



A common problem is working beyond the end of the clinic period. In an effort to complete an appointment, a student sometimes makes repeated attempts at a clinical procedure. The patient is usually tired, hungry, and may need to return to work. The hurried attempts most often either fail completely or produce marginal results. This type of work generally creates problems that are carried forward to the next procedure. In addition, paperwork is not filled out completely, graded steps are not signed, and payments are not made. RPD treatment provides many convenient stopping points. Stop 15 minutes early so charts can be signed, future appointments can be arranged, fees can be paid, and special problems or procedures can be discussed.

Always leave time for consultation with the patient and the instructor at the end of each clinic period. Try to arrange your next appointment before the patient leaves the clinic. Remember, part-time faculty must return to their practices during the lunch hour. If you are organized and get off to a quick start, you can complete all clinical procedures within the clinic period.

CLINIC ATTENDANCE

Clinic attendance is the single most important factor in making satisfactory progress toward graduation. In addition, lack of professional development is closely correlated with low attendance. Our departmental records on individual and class attendance show that when junior students sign up for clinic they are present 88% of the time. Their patients cancel or do not show up 10% of the time. Students are absent approximately 2% of the time. Students who do not complete their minimum clinical requirements have three times the patient cancellation rate of their fellow students and significantly lower clinic attendance. As a general rule, students who utilized 75% or more of the available clinic time complete their work on time. On the contrary, students who utilize less than 70% of their available clinic time do not complete their work on time, and are at the highest risk for dismissal from the College of Dentistry. There are hundreds of reasons that students are absent from clinic but only one good reason to attend clinic, and that is to become a dentist. If you have an open appointment, you should

volunteer to assist another student so that you can gain much needed clinical experience. If you are not sure what to do, ask a full-time faculty member about “shadowing” him or her in the clinic. Show an active interest in your own clinical education and you will leave dental school better prepared.

Cancellations are dependent on many factors including weather, sickness, and transportation. Students can do a great deal to reduce this problem in their clinical practice by:

- Confirming all appointment times.
- Making financial arrangements before starting treatment.
- Not lending money to patients to start or complete treatment.
- Scheduling patient appointments at the same time, same day each week.
- Documenting all cancellations and no shows.
- Having faculty sign all grade book and chart entries.

If your patient cancels, please inform the clinical faculty and have them countersign the chart entry. Some students tolerate late patient cancellations and no shows by not placing the information in the patient’s chart. Later the student may wish to terminate the patient, but there is no documentation to support such action. Please help us keep our records current by making timely and legible entries.

Do not wait indefinitely for patients who do not show up for appointments. Request new patients as soon as you realize that your patients are not showing up for their appointments. You can’t make up lost time; it is gone forever. Part of good patient management is getting your patients to commit to their treatment. If you are committed to your patients, develop a professional relationship with them, and don’t waste their time, your patients will show up on time. However, if you waste your patients’ time through lack of preparation, organization, and communication, you can, literally, encourage them to be unreliable. Students who blame their patients or the “system” for poor patient compliance should take a hard look at the way they are managing their patients. Remember, you will evaluate your patients, but they will also evaluate you!

CLINIC CLEANLINESS

Our clinics are health care facilities; it is important that we keep them clean and neat. Patients are keen observers and are very sensitive to their surroundings. Our professional image is important if we want good patients to continue to choose the O.U. College of Dentistry to provide their dental care. It is the student’s responsibility to maintain the cleanliness of both the dental unit and the laboratory space. Please place all used paper products (Microstone® bags and paper towels) in the trash can. It is helpful to get into the habit of cleaning up as you work.

Protective paper (available in the lab) should be placed on the counter tops when doing prosthodontic procedures at the dental units. Wax and other dental materials are very difficult to remove from the dental units and the floor. No laboratory procedures should be done in the clinic. Instrument boxes or tackle boxes that are used to store and carry equipment should not

be present at the clinic units. All burs should be cleaned before they are sterilized. No unsterilized equipment should be used in the clinic. Place plastic around the Hanau® torches, water syringes etc. Put on over-gloves prior to entering the clinic laboratory and before handling patient records. Patient records are to be placed in the plastic holder on the wall divider, not on the work areas.

FACULTY CLINIC COVERAGE

A faculty member must be present in the clinic during all patient treatment. Do not begin patient treatment until you are given permission to proceed and a faculty member has signed your progress notes. This is for your protection and the safety of the patient, in case of an emergency. Treatment of removable prosthodontic patients may not be done in other clinics or at unscheduled times without the permission of a full-time RPD faculty member. Each semester faculty coverage changes to accommodate student course schedules. These changes are posted in the burgundy clinic and in the RPD department.

Treating patients in the student clinic is a privilege, not a right. Each student must be supervised by a licensed dentist, who may or may not give you permission to proceed. Each faculty member's first concern is the patient's welfare. If, in his/her opinion, you lack the knowledge, skills, attitude, judgment, or equipment needed to proceed with the safe and efficacious treatment of your patient, he/she has the right to deny you permission to proceed until the deficiency has been corrected. This may require reappointment of your patient and successful completion of remedial work. In some circumstances, the patient may have to be reassigned to another student for completion of treatment.

FACULTY CONSULTATIONS

Full-time faculty members are generally available during the day in their offices to check off laboratory work, sign work authorizations, and conduct consultations. Work authorizations and laboratory work can also be checked during any RPD clinic period when students with patients are not waiting. These arrangements were made in an effort to give students consistent and reliable faculty availability and reduce the amount of time students spend trying to track down faculty members. Normally, this system provides at least 26 hours per week of faculty availability. Laboratory work will not be checked during preclinical laboratory courses because it deprives students of timely access to faculty assistance. An updated schedule of faculty assignments will be posted in the burgundy clinic and the RPD department at the beginning of each semester.

If you need information about a specific clinical procedure, you may consult with a faculty member outside of normal clinic hours. If you wait until the scheduled clinic day to prepare for the procedure, you may find yourself unprepared and unable to complete the steps in a timely manner. Many procedures in removable prosthodontics are interdependent and require special preparation. Seek advice early if you are embarking on an unfamiliar procedure. This especially applies to relines, repairs, partial dentures, and immediate dentures because of the many possible variations in treatment sequences. The last section of this guide, titled "Special Clinical Procedures", provides information on specific clinical RPD procedures. Planning ahead will

save a lot of time, effort, and frustration.

CLINIC DECORUM AND ATTIRE

We should all remember that the College of Dentistry is a place where health care is rendered to people. None of us could learn the profession of dentistry or do the research necessary to carry the profession forward without people. A professional atmosphere is enhanced when both the students and the faculty are neat, clean, and prepared. The tone and subjects of our conversations should be professional. Remember, our patients sometimes overhear things that they do not understand and can mistakenly assume it is related to them. Please use the conference rooms to discuss problems regarding patient treatment.

Horseplay and abusive language in the central clinic laboratory can be overheard in the clinic and has resulted in embarrassment for everyone working in the clinic. Male students should be clean shaven, unless you have a beard or moustache. Do not start growing beards during mid-semester. Anyone in violation of clinic decorum and/or attire may be asked to leave the clinic.

If a specific problem relating to a patient's health exists (e.g. latex allergy, hepatitis), please let the faculty member know prior to approaching the patient. If your patient has a complex management or treatment problem, and you have been advised to use a specific prosthodontic procedure, please let the clinical faculty member know prior to approaching the patient. Confusion and contradictions with regard to previous treatment recommendations can cause the loss of patient cooperation and confidence.

PATIENT PROCUREMENT AND ASSIGNMENT

The Director of Clinics makes all patient assignments for treatment. The College of Dentistry has a pool of patients who need immediate dentures, over-dentures, partial dentures and complete over partial dentures. Our pool of complete denture patients is slowly declining. If you have a friend, neighbor, or family member who would make a good denture patient, you may refer them to Oral Diagnosis and assist in their screening. We are always more than happy to screen good candidates. These patients may request assignment to you if you wish to undertake their treatment.

Fall juniors should not wait for a complete denture patient to start in the RPD clinic. Put in your request for a complete denture patient the first week of the fall semester, then request a complete over a partial (C/P) patient. Also, ask for at least one (1) partial denture patient if you don't already have one in your patient family. Take the written RPD competency examination; this does not require a patient, but you receive one (1) clinical point when you pass it. If you have questions about patients or RPD requirements, ask. Don't wait! The fall semester is difficult for all juniors, but waiting will only make things worse; the sooner you bring a patient into our clinic, the better.

When making your initial contact with patients, explain the cost and time required for treatment.

Some patients assume that dentures can be made in a few days -- six weeks is more realistic. Many of our patients rely on friends for transportation, so adequate lead-time must be allowed when scheduling. Some of our patients have no phones and are contacted indirectly by family members. A regular appointment schedule is a necessity for these patients. If you need to make a change in scheduling, it may result in confusion. Always be careful to give explicit directions to the patient and the person providing the transportation. These are not bad patients; they simply require you to have good patient management and organizational skills. The development of good patient management and organizational skills is an integral part of your professional development.

If you cannot contact a patient or they fail to show up for an appointment, document this in the patient's chart. Many students do not make timely entries regarding cancellations or no shows, and then later want to terminate the patient. Unless your chart entries are accurate and countersigned by faculty members, we are required to continue treatment. At the beginning of treatment, each patient should be notified that three cancellations or no shows are grounds for termination from the program. Once we begin clinical treatment, we must continue treating a patient, unless we have documented reasons for discontinuing it. This step requires patient notification and adequate time for the patient to make other arrangements for treatment.

TREATMENT PLANNING CLINIC (TPC)

Complete dentures, relines, and repairs do NOT go to treatment planning clinic (TPC). Patients should be routed through treatment planning board if their treatment requires:

1. fabrication of a removable partial denture.
2. remake of a removable partial denture.
3. extraction of teeth in the same arch for which a removable partial denture has been previously designed. (The doctor who treatment planned the patient should be consulted before any extractions are done that were not originally planned.)
4. an immediate denture.
5. transfer patients whose RPD treatment plan is more than one year old.
6. patients assigned for RPD limited treatment whose treatment plan is greater than one year old.

However, patient's who have an RPD treatment plan that is less than one year old do NOT have to be retreatment planned.

A student should have the following work completed before the TPC appointment:

1. radiographs (current, less than 1 year old)
2. diagnostic work-up information:
 - a. adult health history
 - b. head and neck exam
 - c. tentative treatment plan
3. Mounted diagnostic casts must be current, accurate, and have a flat base. (No horse-shoe casts)

Note: Check your mountings for accuracy. Compare occlusal contacts seen on the articulator with those seen in the mouth made with articulating ribbon. Contacts should appear in the same

locations. If opposing natural teeth do NOT contact on your mounted diagnostic casts, recheck the patient's occlusion. The buccal and lingual vestibules must be accurately reproduced on the diagnostic casts and the casts should not have blebs or voids on the teeth or residual ridges. Use a double pour technique for the diagnostic casts. The casts must have a flat base so they can be placed on a surveying table. Horseshoe-shaped microstone casts with white plaster bases are not acceptable for treatment planning board.

5. tentative RPD design drawn on the RPD Design Sheet. (Do not draw on diagnostic casts until the design is finalized.)

6. RPD grade book (blue section) with pages 1 through 3 filled out for each RPD treatment planned.

Both the patient and the student must be present at the Treatment Planning Clinic. The student should review the diagnostic material so that the information is fresh in his/her mind and can be discussed. Always bring your dental surveyor to TPC when your patient requires a removable partial denture. A red and blue pencil is needed to redraw the final design on the RPD design sheet if changes are required. The student must ensure that the following forms are completed and signed at the completion of the TPC appointment:

1. RPD design sheet (Note relevant findings on this sheet for future reference)
2. Treatment progress notes
3. RPD grade book (blue section ==> pages 1, 2, and 3 must be graded and signed by an RPD faculty member for each RPD treatment planned)

MANAGEMENT OF PATIENT RECORDS

Review the documentation on management of patient records issued by the Director of Clinics for a complete discussion of general policies. As long as a patient is assigned to you for treatment, you are responsible for the contents, entries, accounting, and security of your patient's record. Return your patient's charts to Central Records immediately after treatment. A great deal of time and frustration had been expended trying to locate missing and misplaced charts. Do not remove patient charts from the building.

TREATMENT PROGRESS NOTES

All treatment requires permission to proceed by an RPD faculty member at each clinic appointment. No patient treatment may be rendered in any clinic without faculty supervision. When asking for permission to proceed, all necessary forms and corresponding entries should be present in the chart.

Unfortunately, some entries in clinic records are either incomplete or illegible. This is usually the result of running late in the clinic. Please stop in time to correctly and completely fill out your records. Print if you must! RPD patients usually require long-term treatment and follow up. It is not unusual for RPD patients to be seen in multiple clinics during the course of treatment. No one can render good treatment over an extended period of time without accurate, complete, and legible treatment progress notes.

When an appointment is completed, enter all major steps and materials used during the appointment (e.g. Denture II: Adjust custom trays, Border molded, Final Impression with PVS, etc.). If a patient is unavailable, uncooperative, or difficult to treat for some reason, enter this information into the treatment progress notes. If the patient was informed of some important aspect of their dental condition, such as prognosis or need for improved compliance, then write "Patient informed of....." (Poor prognosis, poor oral hygiene, need to remove dentures nightly, etc.). This is an often overlooked, but important, form of documentation of communication with a patient.

STARTING PATIENT TREATMENT IN THE RPD CLINIC

The day a new procedure is started on a patient an "A" is entered on the patients encounter form to indicate that the procedure is to be billed to the patient's account. Subsequently, a "B" will be used to indicate that the procedure is being continued. The day the prosthesis is delivered, a "C" will be entered to indicate that the procedure is complete. This allows our billing office to submit dental insurance forms for reimbursement. If a "C" is never entered on the encounter form, the patient's account will remain open because the billing office will have no way to know that the procedure has been completed. The patient is not charged for post-delivery appointments, and a "D" is entered for each of these appointments to indicate that the adjustment procedure was started and completed at the same appointment. In essence, a "D" code is an "A" plus a "C."

Complete denture and over-denture patients can be seen in the RPD clinic for evaluation without going to the Treatment Planning Clinic (TPC) so long as no partial dentures, crowns, or periodontal treatment are required. During initial patient evaluation, it is important to discuss the time needed for treatment and the fees involved. A full-time RPD faculty member must evaluate immediate denture and over-denture patients before commencing treatment. The cost for extractions, endodontics, and laboratory relines is not included in the denture fee (except for temporary chair-side relines required during the first 1 to 6 months for immediate denture patients).

Removable partial denture patients must have all periodontal and restorative treatment completed before starting a removable partial denture (i.e. RPD I: mouth preparation). If a patient has not had a prophylaxis in the last three months, this also should be done before the RPD I appointment.

Many patients think dentures can be made in a few days. Dentures can be made in approximately six to eight weeks in the student clinic. We do our best to meet the needs of each patient, while still providing a good learning environment for the students. Explaining this to a patient, in the beginning, will help prevent misunderstandings and will insure cooperation. An uninformed patient may lose patience with the student or quit the clinical program. A patient can also mistake careful, comprehensive treatment for ineptness on the part of the student. Educate your patients before they start treatment so that they understand and accept the benefits AND limitations of our student clinic program.

Although it may seem like the various departments operate quite independently, RPD is an exception. All specialties have a direct bearing on the success or failure of removable partial dentures. RPD is an area where comprehensive patient care is a must. If a patient is not treated in a comprehensive manner, our restorations will fail very quickly. All necessary periodontal and restorative care must be rendered before definitive RPD treatment begins.

Partial denture patients range from very simple to very complex. If RPD patients need no preparatory work, they can be completed within six to eight weeks. However, if a patient requires periodontal and fixed prosthodontic treatment, before beginning a partial denture, it can take 12-24 months. When treatment planning RPD cases, ask about possible job or residence changes. Find out how long your patient has lived in the area. Ask about vacation schedules, so you can sequence treatment (i.e. healing times after extractions and preprosthetic surgery or lab work) around these times. Think about your own preceptorships, vacations, and terminal delivery dates, so they can be coordinated with treatment.

Discussing these issues with your patients also helps develop rapport with them and will give you a realistic idea about the length and sequence of treatment. Always treatment plan several additional RPD patients so that an unexpected problem will not jeopardize your graduation plans. Do not depend on a few patients for everything and do not tell patients they are your only hope for graduation. Unfortunately, some patients have taken advantage of students in this situation by stating that they will complete treatment only if the student pays for the treatment.

COMPLETION OF TREATMENT

COMPLETE DENTURES:

When treatment is complete and your record is in order, your record will be signed off as "Case Completed." Treatment is normally considered completed at the one-week check. It is your responsibility to ask the faculty member who saw the patient to review your chart.

The review should include:

1. Checking all entries for completeness and legibility.
2. Checking all faculty signatures.
3. Checking that the tooth mold and shade are in the progress notes.
4. Checking that the status code was entered as a "C" if this was not done at delivery.
5. Checking that the grade sheets were graded and removed from the grade book.
6. Checking that the student has completed the self-evaluation sheet.
7. Master treatment plan signed and dated.

In rare cases, a second adjustment is not needed (no problems at the 24 hour check) or a second adjustment cannot be done (patient refuses to return). These circumstances must be documented in the progress notes and signed by an instructor. Follow-up appointments are valuable learning experiences. Follow-up appointments provide excellent feedback and insight into patient expectations and concerns so that we can improve our clinical judgment and understanding. For example, we can see if the patient is complying with our oral hygiene instructions. We can also

learn evaluate potential problems by asking the faculty questions, such as: When do we adjust clasps and how? How do we evaluate denture stability? How much retention is enough? When should we consider relining a prosthesis?

REMOVABLE PARTIAL DENTURES:

Partial denture cases are generally signed off after the one-week recall. A simple tooth-borne partial denture should be seen for a one-week check even if all is well at the 24 hour check. This appointment is necessary to reinforce plaque control. The chart check is similar to the complete denture chart check.

FEES AND FEE COLLECTION

Fee collection is an important part of practice management. The skills and awareness you develop in this area will save you time and money in practice. If you ignore this area, you will find that your patients also ignore it. Fees must be discussed prior to initiation of treatment and a clear understanding must exist about when payments are to be made.

All procedures are designated by ADA procedure numbers. These numbers are an integral part of our accounting system. When you leave this institution these are the same procedure numbers you must use to file insurance claims for your patients. Therefore, these procedure numbers are to be recorded accurately when completing clinic forms and patient records. As you will discover, computers run on numbers and the numbers must be correct. The schedule of removable prosthodontic procedure numbers and fees are available at the dispensary.

The total fee for services is to be charged at the initial visit. Do not make partial charges, it will create chaos in the accounting department. For example, if you start two partial dentures, you must charge full fee for both. If you have questions concerning fees, consult with a clinical faculty member away from the patient.

Partial or reduced charges cannot be made for clinical procedures. The clinical computer system will not accept partial or reduced charges for a clinical procedure. Even if a remake of a prosthesis is to be done at no charge, the procedure must be charged at the full price, then an adjustment form must be submitted. Full-time faculty members can only make recommendations for refunds; the final decision is made by the Director of Clinics.

LABORATORY SERVICES

A written work authorization, signed by an RPD instructor, is required for all laboratory services. A student may request the following services:

1. Process and finish complete dentures.
2. Fabricate removable partial denture frameworks
3. Process and finish removable partial dentures
4. Pour altered casts for removable partial dentures
5. Process and finish relines and rebases

6. Repair complete and partial dentures
7. Duplicate casts

The professional laboratory keeps a schedule of required days for each of the laboratory services that they offer. The number of days required does not include the day the case is submitted or the day the case is picked up. Consult with the supervisor of the laboratory about scheduling of laboratory procedures.

Students are required to perform all laboratory procedures for their patients, unless a written work authorization is signed by a faculty member. Students may not have classmates, staff members, laboratory technicians, family members, or other persons perform laboratory work for them under any circumstances. Outside dental laboratories may not be used by students.

CLINICAL ACTIVITIES

The most important factors in the RPD clinic are:

- ATTENDANCE
- PREPARATION
- ORGANIZATION

Contact your patients early in the semester and schedule them in the clinic as soon as possible. Always treatment plan more patients than you will need to complete your minimum clinical experiences. Some patients may not be good teaching cases and may be rejected; others may move or change jobs. Treatment plan at least four partial dentures to be sure of completing two. If they all continue treatment, your educational experience will be broader.

If you cannot start a patient in the first week, try to get a denture repair, or reline patient into the clinic. Plan to be in our clinic at least once a week and you should have no problem meeting your minimal clinical experiences.

Experience has demonstrated that students who are prepared:

- Waste less time
- Complete minimal clinical experiences earlier
- Earn higher grades

The easiest way to prepare is to review your notes and textbook references on the procedure, then consult with an instructor several days prior to the patient's appointment. Bring the patient's RPD design sheet, radiographs, and diagnostic casts so the instructor can clearly understand the clinical situation and provide the most accurate advice. If you wait until clinic to ask questions that require extensive consideration and discussion, you may have to wait so that other students can be signed in and get started. These delays can be frustrating for you and your patient.

Each instructor has 3 hours to supervise 30 to 40 hours of dentistry provided by 10 to 12 students. In short, one or two poorly prepared students can monopolize a tremendous amount of instructor's clinic time. Example: A student plans to make mouth preparations for a removable partial denture opposing a complete denture. He/she has doubts about how much reduction is needed in the rest areas. A crown and several amalgams have been done.

What should the student do to prepare for the appointment?

1. Review the chapter in the textbook on mouth preparation.
2. Make a new diagnostic cast (crown and amalgams have changed the contours).
3. Take the diagnostic casts, surveyor, and design sheet to an instructor prior to clinic.
4. Bring your surveyor, updated diagnostic cast, operative burs, RPD burs, and fixed burs to the clinic.*
5. Make guide surface and rest preparations on the diagnostic cast and show them to an instructor.

*The RPD burs supplement other burs needed for rest preparation. They are not the only burs needed.

PATIENT APPOINTMENTS

Start patient treatment as early as possible each semester. Few students take advantage of a fast start in the clinic. The early birds have a much better student to instructor ratio and get faster service from the student laboratory. If something goes wrong, the early birds have time to recover. For example, winter weather can result in unanticipated clinic closure and patient cancellations, leaving those who got a late start in a lurch. Plan ahead!

It is the responsibility of the student to schedule his/her patients in the general clinics according to the clinic schedule and assigned faculty coverage. Please do not keep patients waiting for unreasonable lengths of time while you work on patients in another clinic.

Problems have arisen for students who try to squeeze-in patients for 24 hour and 1 week recalls. Sometimes these appointments are short, but many times extensive problems exist which the student has not anticipated. Some students arrive at 25 minutes until noon asking for permission to proceed on a denture adjustment. We have found it impossible to serve either the student or the patient under these circumstances. Patients should be scheduled for a full clinic appointment for 24 hour checks and one week recalls because it is difficult to anticipate the length of time required to address more complex complaints.

CANCELLATIONS

The patient cancellation rate is between 12% and 14%. For individual students it ranges between 0% and 50%. There are many factors that influence the cancellation rate including weather, transportation, work schedules, health, and patient management. Patients who feel like they are not making progress in their treatment are more likely to cancel appointments. Always confirm appointments to reduce misunderstandings with patients and reduce cancellation rates.

TERMINAL DELIVERY DATES

Each semester a date is set as the last day for delivering immediate dentures, complete dentures, partial dentures, and relines. This date is established to provide adequate follow-up care for our patients. The terminal delivery date is the last day you may delivery a prosthesis and still have adequate time to provide the minimum necessary post-delivery care. Terminal delivery dates for complete dentures, partial dentures, and relines are one full week prior to the end of fall semester, summer session, and graduation. The terminal delivery date is not changed due to poor weather or clinic closure.

The terminal delivery date for immediate dentures is always 1 month prior to the end of the fall semester, summer session, and graduation day. Immediate denture patients undergo rapid and continuing changes, so they need to be followed for a longer time period. A schedule, with the terminal delivery dates, is posted in the burgundy clinic. If you cannot meet these deadlines, you must discuss the situation with the RPD Clinic Course Director. We hope this system will insure patient comfort and keep emergency treatment to a minimum during school holidays. Scheduling requires advanced planning.

INCIDENT REPORTS

The Clinic Policies Committee has developed a protocol and reporting form for “unusual and unforeseen” events in the clinic. An “unusual event” is a physical accident not directly induced, caused by, or the result of treatment rendered to a patient. An example would be a patient who trips while being seated in the dental chair. The event may or may not cause an immediately evident injury. An “unforeseen outcome” is the result of treatment rendered to a patient where the outcome lies outside the expected range. An example would be a skin rash following preliminary impression making.

Note: All unusual and unforeseen outcomes which occur in the College of Dentistry must be reported. Doubtful situations should be discussed with the Director of Clinics. All threats of legal action must also be reported to the Director of Clinics.

1. Non-Emergency Situations: Report the event immediately to attending faculty members, and then to the Director of Clinics for assistance with the report.
2. Emergency Situations: Never abandon an injured or medically compromised person. Ask the closest student or employee to get help from the nearest faculty member. At the earliest time following the incident, but after you are dismissed by the faculty member in charge of the situation, report the event to the Director of Clinics. He/she will help with the completion of the incident report.
3. Reports Received by Telephone: Follow the procedures outlined above unless the call is received after school hours. In that case, report the incident to the Director of Clinics immediately the following day. The attending faculty member should supervise entries in the patient’s record. Copies of the incident report form can be found in the general clinics and in the office of the Director of Clinics.

CLINICAL GRADING POLICIES

MINIMUM CLINICAL EXPERIENCES

Forty (40) points of clinical experience are necessary for graduation. The forty (40) points may come from the following list. This must include two (2) cast metal RPDs and three (3) competency examinations.

Three (3) points of competency examinations

- One (1) point RPD design competency examination
- One (1) point maxillary final impression evaluation examination
- One (1) point mandibular final impression evaluation examination

Twelve (12) points of complete denture as follows:

- Four (4) points of C1 (1 unit for each arch of record bases and wax rims)
- Four (4) points of C2 (1 unit for each arch processed denture)
- Four (4) points of C3 (1 unit for each arch of delivery and adjustment)

Twelve (12) points of removable partial denture as follows:

- Four (4) points P1 (2 units for each arch of RPD treatment planning)
- Four (4) points P2 (2 units for each arch of RPD framework try-in)
- Four (4) points P3 (2 units for each arch of delivery and adjustment)

Note: Immediate dentures, over-dentures, implant dentures are all considered complete dentures for the above requirement.

Thirteen (13) points of additional clinical experience with complete dentures, partial dentures, immediate dentures, treatment partial dentures, relines, rebases, repairs, and implants.

For departmental purposes, a case will be considered “COMPLETED” after the second adjustment appointment if all paperwork has been filled out properly and turned into our departmental secretary. Don’t forget the student self-assessment at the end of the clinical grade sheets. The student remains responsible for routine follow up care on completed patients until graduation or until the patient is terminated.

If a patient does not or cannot return for follow-up care, enter the reason in the patient’s chart and have your entry countersigned by a faculty member. An RPD chart check must be done when patient treatment is completed. The shade and mold must be entered in the progress notes, and the student self-assessment completed. All entries must be legible and countersigned by a faculty member.

If a partial denture case is transferred to you (including remakes), you must go through treatment planning clinic to review and finalize a new RPD treatment plan if the old treatment plan is more than one year old.

In order to demonstrate satisfactory progress, the student must accumulate minimum clinical experiences as outlined below.

MINIMUM CLINICAL EXPERIENCES BY SEMESTER:

Fall Junior Year:	8 points
Spring junior Year:	8 points
Summer Junior Year:	8 points
Fall Senior Year:	8 points
Spring Senior Year:	8 points

In order to receive a grade, treatment and administrative procedures must be “COMPLETED” by 5 p.m. of the last clinic day of the academic grading period. This means that all grade sheets must be graded and signed by an RPD faculty member and turned into our secretary by the end of the last day of clinic that semester. If you do not know if you have received clinical credit for a procedure, ask the RPD secretary for a current *RPD Clinical Grade Report* to check your progress. Each semester, a few students forget to have their clinical procedures graded in a timely manner. Typical reasons are: 1) The student forgot his/her grade book; 2) The procedure was never completed, 3) The student was working with multiple instructors and no one saw enough of the project to issue a grade, or 4) The graded pages were not removed from the grade book. Late or missing grade sheets will delay receiving credit for the clinical procedures and may reduce your clinical grade. You are responsible for keeping your grade book updated!

The department evaluates clinical performance each semester. Under this system the student’s grade is based on both quality and quantity of work completed. The following table of cumulative units will be used to determine the student’s eligibility for a specific grade. If the quality of work completed averages 90% or above (“A” quality) and the student has completed enough quantity of work to qualify for an “A” grade, an “A” will be awarded. If the student qualifies for an “A” grade based on quality, but has only qualified for a “B” grade based on quantity, a “B” will be awarded. Both quality and quantity are important factors in evaluating clinical performance. It is bogus to separate these two criteria; a sufficient quantity of work must be completed to assign a meaningful quality grade. Example: If you make one or two good landings in an airplane, with assistance from an experienced pilot, should we issue you a license to fly passengers? In our mind, RPD requires broad clinical experience (quantity), rendered at a sufficiently high level (quality) to prepare you for independent practice on the general public.

Quantity is cumulative, but quality is based on performance during each grading period. If a student does not meet the minimum clinical requirements for a “C” grade in either quality (70% or above) or quantity (see table), he/she will receive an “F”. Regardless of how far ahead a student is in his/her clinical experiences, at least one (1) point of work must be completed during each grading period to establish a quality grade and maintain minimal clinical skills. A quality bonus percentage of .05% is given for each point of clinical experience above that necessary to qualify for a grade of “A”. In other words, additional quantity can supplement the quality grade slightly. The bonus points provide a safety net and incentive for those students who are on the borderline and want to do additional clinical work.

CUMULATIVE CLINICAL EXPERIENCES:

Fall Junior Year	8 points
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Spring Junior Year	16 points
Summer Session	24 points
Fall Senior Year	32 points
Spring Senior Year	40 points

If work is delivered late (after the terminal delivery date for the grading period), the student's grade will be lowered one letter grade.

All clinical procedures are graded except for miscellaneous clinical procedures and competency examinations, which are evaluated on a Pass-Fail basis. The RPD faculty views all clinical experiences as educational, and we understand that patients can vary significantly in difficulty. In order to be equitable to all students, the point value of each procedure is determined by the supervising clinical instructor within the following limitations:

CLINICAL EXPERIENCES BY PROCEDURE:

Complete dentures/arch	3 points
Complete denture+implants/arch	
Implant supported	5 points
Fixed Detachable	6 points
Fixed/abutment	2 points
Partial dentures/arch	6 points
Partial dentures+implants/arch	6 units
Immediate dentures/arch	4 points
Laboratory relines/arch	3 points
Chairside reline/arch	1 points
Denture repair/arch	1 points
Treatment partial dentures/arch	3 points
Miscellaneous /arch	1 points
Competency Examinations	1 points
Other: Specified by supervising faculty	

CLINICAL EVALUATION

All clinical procedures to be evaluated are listed in sequence (color-coded) in the student's RPD Grade book. Clinical and laboratory information related to the procedures is listed on the back of each evaluation form. In the evaluation of student performance, the instructor may consider the following areas:

ADHERENCE TO CLINIC POLICIES

- Proper patient scheduling
- Chart handling
- Permission to proceed and end clinical appointment
- Accurate patient encounter forms
- Legible and accurate chart entries

Infection/contamination control

KNOWLEDGE OF THEORY

- Student's knowledge of the procedures and their relationship to patient care.
- Student's ability to apply basic science knowledge to clinical situations.
- Student's ability to evaluate his/her own performance.
- Student's ability to discuss basic principles and possible alternative procedures.

TECHNICAL SKILL

- Demonstrate basic skills with decreasing faculty assistance.
- Perform technical skills according to specific instructions.
- Successfully perform a given procedure within a reasonable number of trials.
- Perform procedures with increasing independence, speed, accuracy, and confidence.

ATTITUDE

- Demonstrates a positive attitude toward the patient
- Demonstrates a positive attitude toward learning
- Demonstrates a willingness to follow instructions and protocol
- Promotes a positive and constructive learning environment

CRITICAL THINKING

- Makes good clinical decisions
- Translates knowledge into new contexts
- Interprets facts, compares, and contrasts alternative procedures or materials
- Solves problems using appropriate skills or techniques
- Differentiates key findings
- Selects appropriate procedures or treatment

PROFESSIONAL DEVELOPMENT

What is professional development?

Professional development is the continuing acquisition and enhancement of knowledge, skills, judgment, and attitudes, through study, practice, experience, and reflection, needed to treat patients in an ethical, compassionate, and effective manner. Professional development begins in dental school and never ends; it is part of a commitment to lifelong learning, your patients' welfare, and continuing advancement of your profession. The choice you made to become a professional person has obligations that will require sacrifices, choices, and commitments.

If you have not acquired the knowledge, skills, and attitudes to handle the increasing responsibilities necessary to manage and treat your patients effectively, you are not developing professionally. Cardinal signs of lack of professional development are blaming others for your problems or mistakes, lack of clinical progress, poor attendance, avoidance of responsibility,

non-responsiveness to faculty or patients, failure to take the initiative, failure to work-up or appoint patients, and resistance to learning. If you find yourself unable or unwilling to fulfill your obligations and responsibilities to your patients, you should seek advice immediately. As an adult student, you must take action to address your problems. Consult an appropriate faculty member (i.e., Director of Clinics, Dean of Students, RPD Department faculty). Remember, it is easier for you to find us than it is for us to locate you, and you should be the first to know that you have problems.

GRADING

It is the student's responsibility to obtain the instructor's evaluation for each procedure during the clinic period within which the procedure is performed. Failure to obtain an instructor's evaluation at this time may result in a lowering of the grade or loss of credit for the procedure. You will find it convenient to remind your instructor to grade the procedures as they are performed, but you must have your grade book available. Your grades will more accurately reflect your clinical ability when evaluations are done in a timely manner. If grade sheets are not complete or not turned in by 5:00 p.m. on the last day of clinic, no credit will be earned for the procedure for that semester. Late grade sheets are applied to the next grading period.

All clinical grades range from 0 to 100:

100%	Superior work, minor faults or imperfections, very neat
90%	Above average work, mild flaws, very neat
70%	Average work, some correctable faults, clinically acceptable
<70%	Below average work, procedure must be repeated
"I"	Instructor demonstrated the procedure

An "I" grade may be used by an instructor in the clinic for the benefit of the patient and/or the student. If a student does not have the knowledge or technical skill required to satisfactorily complete a clinical procedure, the instructor may, at his/her discretion, demonstrate the procedure. An "I" grade is not given if the student lacks the understanding or ability to do routine procedures or cannot complete the procedure because of lack of preparation or knowledge.

Instructors reserve the right to dismiss a student from the clinic due to lack of preparation, lack of equipment, poor attitude, poor hygiene, unprofessional appearance, lack of knowledge, lack of infection control, or unwillingness to follow instructions or protocol.

Once a student's total points have been tabulated and the percentage determined, the following grade scale is used to derive a letter grade:

A	= 90% to 100%
B	= 80% to 89.99%
C	= 70% to 79.99%
F	= Below 70%

In order to receive credit for completed treatment, a student must have a final average of at least 70% for a case. Grades are not rounded up, but a 0.5% quality bonus is awarded on the basis of

each quantity point exceeding the minimum necessary for an “A” grade. Therefore, completing additional clinical work is a good way to earn a higher grade when you are on a borderline.

MINIMUM QUANTITY OF CLINICAL POINTS

Eligible for:

Eight (8) points	Grade = “A”
Five (5) to seven (7) points	Grade = “B”
One (1) to four (4) points	Grade = “C”
Zero (0) points	Grade = “F”

Note that cumulative point deficiencies from previous semesters must be made up before points begin to count for the current semester. For example, you earned seven (7) points in the fall semester of the junior year and had an 87% average. Your assigned grade would have been a “B” for the fall semester. However, because you were one (1) point short of the cumulative requirement of eight (8) points, the first point earned in the spring semester would be used to satisfy that deficiency. All subsequent points earned in the spring would be applied to the spring requirement point requirement. If you completed an additional six (6) points during the spring semester with an 85% average, you would again receive a grade of “B.” However, you would now need to earn two (2) points during the summer semester to make up the cumulative point deficiency from the spring semester. Again, subsequent points would be applied to the summer point requirement. This system allows a great deal of flexibility to overcome patient related problems but still requires that you overcome past deficiencies in clinical experience.

QUALITY VERSUS QUANTITY

This is an old issue that keeps coming up in various forms in dental education, as people try to rationalize why less is more when considering quantity. The question is always the same: If the quality of my work is satisfactory, why do I have to do more quantity of work? This may sound strange, but quantity is necessary for quality when you are learning a skill. Take golf, for example. How many golf balls should you hit on the driving range? One? Ten? A hundred? If you make one good shot, do you put your clubs away and go home? No! Repetition improves the quality, consistency, and accuracy of your shots, especially if the wind is blowing or it’s raining!

What is the first question you would ask a surgeon, if you needed an operation? Do you ask, Are you a good surgeon? Do you ask, have you had one or two good results? No! The first thing you ask is, How many of these operations have you done? What kind of complications can I expect? What percentage of your patients were worse off after the surgery? What percentage of your patients were cured by the surgery? Similarly, think about an airplane pilot and how many landings are required to become proficient in all weather conditions. In the dental office, you are the surgeon and the pilot!

Dentistry requires skills and judgment that are enhanced by practice, repetition, and reflection, under constantly varying conditions. And because each patient presents very different situations, you need to do as many procedures as you can while you are in dental school. In dental

education, we rarely see quality work, good judgment, and confidence, until a sufficient quantity of work is completed. Don't attempt to graduate with the bare minimum of quantity.

COMPETENCY EXAMINATIONS:

There are three (3) competency examinations given by the RPD department. All competency examinations are pass/fail and, when passed, count as one (1) point of clinical experience.

COMPETENCY EXAMINATION #1

The first competency examination is given during the first semester of the third year. It has two sections: 1) written questions related to RPD diagnosis and design and 2) an RPD design based on simulated diagnostic information. The student must achieve a grade of 80% on part one and demonstrate a basic understanding of RPD design principles on part two. The result is a pass or fail evaluation. If you fail the examination, you may request to review the examination in the presence of the RPD secretary. You may refer to your textbook and your notes to identify errors and clarify your thinking, but you may not keep or make copies of the examination. Because this is a competency examination that requires analysis and critical thinking on your part, the faculty will not identify or explain your errors to you. The RPD competency examination may be scheduled with the RPD secretary at any time during the week. Only the student's secret number is to be placed on the examination material submitted for evaluation.

COMPETENCY EXAMINATION #2

Competency examination #2 requires the student to evaluate ten (10) maxillary final complete denture impressions and determine whether each is clinically acceptable or not. The student must correctly designate seven (7) out of ten (10) complete denture impressions to pass the examination. A pretest is available, which has ten (10) maxillary final impressions for evaluation. A key to the pretest is provided, which identifies the problem areas and designates the impression as clinically acceptable or not.

COMPETENCY EXAMINATION #3

Competency examination #3 requires the student to evaluate ten (10) mandibular final complete denture impressions and determine whether each is clinically acceptable or not. The student must correctly designate seven (7) out of ten (10) complete denture impressions to pass the examination. A pretest is available, which has ten (10) mandibular final impressions for evaluation. A key to the pretest is provided, which identifies the problem areas and designates the impression as clinically acceptable or not.

RECOMMENDATION

We have approximately 250 pre-professional students in this building on any given day, and we treat approximately 1000 to 1500 dental patients each week. Unfortunately, you can be overlooked in this complex environment. If you have any questions, problems, or concerns see the Chairman of the RPD Department as soon as possible. Do not play a waiting game with your dental education; be proactive while you still have time to get help and recover from your problems. As an adult, we expect you to participate in the educational process and seek help in a timely and appropriate manner.

SPECIAL CLINICAL PROCEDURES

IMMEDIATE DENTURES

DIAGNOSIS AND TREATMENT PLANNING

Patients who are screened in Oral Diagnosis with a tentative treatment plan for immediate dentures must be appointed in the treatment planning clinic (TPC) for a final diagnosis and treatment plan before any treatment is performed, excluding emergency treatment.

The initial appointment in TPC should include the usual review of the patient's health and dental history, chief complaint, head and neck exam, and yellow denture diagnosis sheet. Diagnostic information must include the patient's ability to tolerate surgical procedures and the psychological capacity to accept and adapt to immediate dentures. Evaluate the patient's gag reflex. The lack of a physical examination within the past six months or unresolved medical problems requires a medical consultation.

During the initial appointment, the location, nature, and cause of any pathological oral condition should be noted. The reason that the patient must lose their remaining teeth should be noted in writing and discussed with the patient. Evaluate any non-pathological conditions that affect diagnosis and treatment. These conditions may include bony prominences, enlarged tongue, abnormal jaw relationships, and "gag" reflexes. A final decision regarding preprosthodontic surgery will require examination of the patient and the diagnostic casts.

After an oral exam and charting of the oral conditions, a set of diagnostic casts is made and mounted on an articulator with a facebow transfer and centric relation record. This procedure may require the fabrication of record bases and wax rims. The diagnostic casts will be retained, unmodified, throughout treatment. If overdenture abutments are to be used, P.A. radiographs are made for periodontal and endodontic consultations.

DIAGNOSIS AND TREATMENT PLANNING APPOINTMENT

The Student must have:

- mounted diagnostic casts.
- completed medical history and medical consultation, if required.
- Oral Surgery, Periodontal, and Endodontic consultations, if indicated.
- tentative written treatment plan, routing schedule, and fee schedule.

After a review of the medical, dental history, local oral factors, and diagnostic casts, a treatment plan is prepared and presented to the patient. A full-time faculty member in RPD must sign this treatment plan.

Consultation with the patient must include a time schedule of treatment, post-delivery care, and recalls. Fees for modifications of the denture, chairside relines and recalls are part of the original fee, but a laboratory reline is an additional fee. It is always possible with an immediate denture that new dentures may need to be fabricated (at full fee) instead of a reline. The patient needs to be made aware of this possibility.

Each semester, one or two instructors are in charge of immediate denture treatment. These instructors, solely, should be consulted in regard to immediate denture treatment, sequencing, and delivery. The name of these instructors and the days (usually Monday AM and Tuesday AM) for immediate denture patient care is posted on the clinic schedule each semester.

CLINICAL PROCEDURES

The clinical procedures for an immediate denture begin with the removal of all posterior teeth. One or two posterior teeth may be retained to preserve the vertical dimension of occlusion. A post-operative healing time of approximately 21 days is allowed for wound healing prior to initiating denture construction.

Once wound healing has occurred, preliminary impressions are made with irreversible hydrocolloid (alginate). Posterior secondary trays are constructed. These trays will be utilized to capture an impression of the posterior edentulous supporting structures and the limiting areas of the peripheral roll. The tray should cover the lingual aspects of the anterior teeth. Utilizing this method, the embrasure areas and lingual surfaces of the anterior teeth are captured. The succeeding over-impression is made to capture the facial-incisal surfaces of the anterior teeth and facial vestibule.

Adhesive is applied to the custom tray and PVS impression material is used to record the soft tissue surfaces of the posterior edentulous area and the lingual aspects of the anterior teeth. Once the material is set, the impression is removed from the mouth and excess impression material is trimmed with scissors and/or a sharp Bard Parker® knife. The outer surface of the impression tray is painted with adhesive. The tray is returned to the mouth and an over-impression is made with a stock tray and irreversible hydrocolloid. The dual PVS/alginate impression is double poured in vacuum mixed microstone to make the master cast.

Modified posterior record bases with wax occlusion rims are constructed to record the maxillomandibular relations. Triad is used to construct the record bases. The record bases are modified to exclude the anterior teeth. Check the record bases for occlusal interferences from the opposing anterior teeth and/or record base at the VDO.

A facebow transfer is used to articulate the maxillary cast on an articulator. The posterior palatal seal is located and transferred to the cast. Maxillomandibular records are established in a conventional manner with the opposing teeth .5 mm out of contact to prevent a slide. The mandibular cast is mounted against the mounted maxillary cast.

Anterior and posterior teeth of an appropriate mold, size and shade are selected. The posterior teeth are set. The patient is appointed for a try-in to confirm the vertical dimension of occlusion and the maxillomandibular relation.

The casts are modified and the teeth removed in a sequential fashion as suggested in the “Immediate Denture” syllabus. The anterior teeth are set in accordance with the dictates of the existing natural teeth and the requirements of the occlusion.

The full time faculty member assigned to immediate dentures evaluates the final denture setup before the final wax up. The professional laboratory will do the final wax-up prior to processing. The patient should be scheduled to view the final set-up, wax-up, and shade of the remaining teeth. After processing, trimming, and polishing are completed, the denture is ready for insertion. Show the finished dentures to the faculty member with whom you will deliver the immediate denture prior to the day of delivery.

CLINICAL APPOINTMENT I

Preliminary Impressions

Review information given to the patient during consultation and diagnostic phase. Record the shade and mold of the remaining teeth. Ask the patient to bring old photographs or casts if the dentition is mutilated. Utilize stock trays to make alginate impressions for the diagnostic casts.

Laboratory Procedures

Outline the proper tray extensions on the diagnostic cast. Blockout the hard and soft tissue undercuts. Fabricate a custom tray with tray material and trim and smooth the borders.

CLINICAL APPOINTMENT II

Final Impressions

Adjust custom trays in the mouth and perform the border molding procedure. Upon completion of border molding, reduce and trim the compound. Paint the impression tray with adhesive. Outline the posterior palatal seal prior to making the impression. The final impression of the posterior edentulous area is made with PVS in a custom tray.

The final custom tray impression is replaced in the mouth after trimming and a second impression is made with alginate and a stock tray over the custom tray impression. This impression is made to capture the anterior area not recorded by the custom impression.

Laboratory Procedures

Master casts are made with a double pour of the final impression. The record bases are fabricated and occlusal wax rims are constructed.

CLINICAL APPOINTMENT III

Maxillomandibular Records

Establish VDR using marks on the nose and chin. Make a facebow transfer and record centric relation. Note: centric occlusion and centric relation may not be coincident. This situation may require occlusal equilibration. Once the maxillary and mandibular casts have been indexed and mounted, the record bases are returned to the mouth and the centric relation mounting is proved. Tooth selection is accomplished before the patient is dismissed. Tooth selection is choosing and recording an acceptable shade and mold for the patient and writing the information in the patient's chart.

LABORATORY PROCEDURES

The posterior palatal seal is placed in the maxillary master cast. Utilizing a facebow transfer, the maxillary master cast is mounted on an articulator. The centric relation record is used to articulate and mount the mandibular master cast. Check for interference between the bases of the casts. Lute the casts together before mounting.

Once the casts have been mounted, a tooth order form is completed, signed by the faculty member, and taken to the laboratory. The denture teeth are set directly on the cast unless another try-in is needed to confirm the VDO or centric relation record.

CLINICAL APPOINTMENT IV

Wax Try-in

The student needs to present the patient with a final wax up so the patients can view, approve, and consent to have the immediate dentures processed. Seeing the final set-up reassures patients who are apprehensive about changes in their appearance and small problems can be rectified prior to delivery.

LABORATORY PROCEDURES

A remount index record is made to preserve the facebow transfer. A work authorization is completed and the dentures are submitted to the professional laboratory for wax up and processing.

Pre-Delivery of Immediate Dentures

Preparation of the finished dentures the day before delivery

1. Evaluate borders and tissue surfaces. Allow the RPD faculty member in charge of delivery to inspect the processed denture(s). Many times the tissue surfaces will contain fins and over extensions that require modification.
2. Sterilize instruments for delivery (available in burgundy clinic).
3. Remount casts are fabricated in a conventional manner.
4. Disinfect dentures (see "Prevention of Cross-contamination").

CLINICAL APPOINTMENT V

Delivery of Immediate Dentures

The student signs up for immediate denture delivery in both burgundy clinic and Oral Surgery.

Bring the patient and the dentures to RPD clinic for evaluation before going to Oral Surgery.

1. Patient Preparation (begin in burgundy clinic). Review medical history, treatment plan, and prognosis with patient. Review follow-up appointment schedule with the patient.
2. Extraction of teeth will occur under the auspices of Oral Surgery.
3. Adjustment and seating of immediate dentures is accomplished in the customary manner using PIP and disclosing wax.
4. Sometimes the fit of the denture bases will be poor, and the use of tissue conditioning material will be necessary at the time of delivery.
5. Home care instructions are given to the patient prior to dismissal.
6. Follow-up care may require the use of tissue conditioning material due to continued resorption of the residual posterior ridges during denture fabrication.

PREVENTION OF CROSS-CONTAMINATION

1. All personnel who have direct contact with the patient should wear gowns, gloves, masks, and protective eye wear.
2. Work areas and equipment should be cleaned with disinfectant.
3. Acrylic resin dentures should be disinfected by scrubbing with 2% iodoform solution and stored in sterile saline. If the patient is allergic to iodine, use soap and water and store in sterile saline.
4. The use of sterile packages is recommended for delivery and post-delivery adjustments of immediate dentures. The following packages are required.

Sterile Package #1

1. Acrylic burs (cone and tapered shapes)
2. Brush and paper pad for pressure indicating paste
3. Articulator ribbon and Miller's forceps
4. 2x2 cotton gauze
5. Tongue blade

Sterile Package #2

1. Cloth wheel
2. Pumice (4-oz. bag)
3. Disposable Styrofoam pan
4. New arbor band

NOTE: A low speed handpiece should be sterilized and available for immediate denture delivery.

Sterile package set-ups should be prepared for all instruments, materials, and devices that are to be used intraorally. Sterile tin foil squares should be used to cover switches and handles that will be utilized by the dentist during oral surgery and denture delivery.

Sterile towels should be available for covering instruments and draping the patient. Packages,

instruments, and materials should be dispensed prior to seating the patient. These items should include pressure indicating paste and a container of sterile water. The prostheses should be removed from the heat sealed package and placed in sterile saline.

The patient is now seated and draped with a sterile towel. The teeth are extracted. The prostheses are adjusted using pressure indicating paste and sterile burs. The occlusion and VDO are evaluated at this point. If gross prematurities exist, they are adjusted. After adjustments have been completed, the dentures are again scrubbed with iodoform solution, or soap and water if an allergy exists. The dentures are rinsed in sterile water, and returned to the patient's mouth. The patient is given instructions (see "Post-Operative Instructions for Immediate Denture Patients")

Appropriate procedures for the prevention of cross-contamination should be followed at subsequent adjustment appointments, particularly those occurring prior to wound closure.

CLINICAL APPOINTMENT VI

Post-delivery Care (Short-term)

At the 24 hour recall appointment, over extensions and sore spots are adjusted with PIP and disclosing wax. Home care instructions are once again reviewed.

A 48 hour or prn recall appointment is usually required. The next appointment is a one-week recall appointment. The occlusion should be reevaluated, and a remount and occlusal adjustment procedure should be performed.

Post-Delivery Care (Long-Term)

In 2-3 weeks the patient is seen for interim relines and/or denture modifications which would include border adjustment, chairside relines, occlusal adjustments, and a review of home care instructions. In 9-12 months the patient is evaluated for a processed reline or new denture fabrication.

Post-Operative Instructions For Immediate Denture Patients

You must leave your dentures in your mouth for the first 24 hours. Removing the dentures will not decrease pain due to the extractions. Swelling may occur, and if you remove your dentures, you may not be able to reinsert them.

If several teeth have been extracted, some swelling and discomfort is to be expected. Holding ice packs against your face in the area of the extractions (no more than 20 minutes/hour for the first 24 hours may reduce swelling. After 24 hours, use a wet heat compress). Take prescribed medications as directed.

The denture will act as a bandage and help to limit bleeding and prevent breakdown of the blood clots that form in the sockets. Although bleeding is normally minimal, you must remember that a few drops of blood will color your saliva pink.

Your diet for the first 24 hours should be restricted to liquids or soft foods. You can gradually increase the substance of your diet as healing progresses.

Your bite (the way the upper and lower teeth come together) will usually not be perfect when you first get your dentures. Although major imperfections will be corrected at the insertion, 24-hour adjustment, and 48 hour adjustment appointments, the final refinement cannot be accomplished until all swelling has disappeared (7-10) days.

Care varies for each patient after they first get their new dentures depending on the condition of their general health, the number of teeth removed, the difficulty experienced in removing the teeth, and the anatomical form of the remaining ridges and soft tissues. All immediate denture patients must be seen in 24 hours for adjustments of the denture borders and relief of the denture bases where excessive pressure is being applied to the underlying tissues. A 48 hour appointment is also needed for most patients. Further appointments for adjustment of the denture base and the occlusion (bite) are arranged to meet the needs of the individual patient.

After the 24 hour appointment, your dentures should be removed for cleaning after meals. Always hold the dentures over a sink partially filled with water while cleaning them (should you accidentally drop them, the water will break their fall and damage will be less likely).

Scrub the tissue surface (inside) of the dentures with a denture brush, liquid soap, and water. Brush the external surfaces and the teeth of the dentures and, for maximal cleanliness, brush your tongue and the roof of your mouth. Always keep the dentures wet while they are out of your mouth. Use the recommended products to aid in keeping your dentures clean. Always thoroughly brush and rinse the dentures with plain water after using cleaning agents because many cleaning agents are designed to be used only outside the body and may cause harm if swallowed or placed against oral tissues.

After 24 hours, you should begin removing your dentures at night. Removing the dentures allows small blood vessels to enlarge and provide nourishment to the tissues supporting the dentures.

Subsequent Service For Immediate Dentures

As initial adjustments are made and healing progresses, you will notice marked improvement in comfort and function. However, your gums will continue to shrink for 9-12 months and your dentures will become gradually looser.

The denture treatment should be re-evaluated in 4-6 months to determine the need for additional treatment. The need for a temporary or processed reline usually can be determined by the amount of tissue change that has occurred in your mouth. Temporary relines by the dentist may be used to compensate for small, short-term changes (these alterations are provided without cost). All immediate dentures will eventually require a processed reline or remaking of the dentures within 9-12 months. A fee is charged for these services and, if a reline is indicated, you will need to arrange to be without your dentures for 24 hours.

With immediate dentures, you have the advantage of never being without teeth. However, there are certain compromises in the procedure. Impressions are not as accurate, the occlusion (bite) is more difficult to perfect, and relining or remaking the dentures will be necessary. Your dentist will tailor post-insertion care to your needs so that you will continue to function in comfort. It is important that you understand these benefits and compromises so that you will be patient with the dentist, the dentures, and yourself.

INTERIM COMPLETE DENTURES

An interim complete denture is a temporary denture made to be used for a limited amount of time. It is sometimes referred to as a “treatment” denture because it is used during treatment, but is later replaced by a definitive denture. An interim complete denture has several advantages. First, the vertical dimension of occlusion can be tested. Second, correct flange length, thickness, and contour are established. Third, the patient has a period of time to make the transition from a removable partial denture to a complete denture. Fourth, the patient does not have to go without dentures during treatment.

An interim complete denture has limited uses, but there are times when its use is indicated:

1. To establish the appropriate vertical dimension of occlusion.
2. To establish a comfortable jaw relationship in a patient with temporomandibular joint dysfunction or myofascial pain.
3. To determine desirable flange length, thickness, and facial lingual contours.
4. To be used as an interim prosthesis while an overdenture, immediate overdenture, or implants are being placed.

An interim complete denture can be a patient’s existing denture that has been modified with autopolymerizing tooth colored acrylic resin to establish an acceptable vertical dimension of occlusion. The posterior teeth may be removed and tooth colored acrylic resin added in the area of the posterior teeth.

Another alternative is to make alginate impressions of the interim denture arch and the opposing denture. A record base is made from the resulting cast and used to determine the maxillo-mandibular relationship. A facebow transfer and maxillomandibular record are used to mount the casts on an articulator. Anterior teeth are set to the opposing teeth and a wax occlusion rim is used for posterior teeth. The interim denture is waxed and processed in acrylic resin. (tooth colored acrylic resin can be used for the posterior teeth.)

OVERDENTURES AND IMMEDIATE OVERDENTURES

An overdenture is a prosthesis partially supported by endodontically treated roots that are retained to provide support and stability. An immediate overdenture is placed immediately after all remaining teeth are extracted except for endodontically treated roots that are retained to provide support and stability. Overdentures are usually constructed prior to reducing the clinical crowns of the endodontically treated teeth. This allows a patient to wear their RPD until delivery of the final denture.

An immediate overdenture is constructed in the same way as an immediate denture. The difference is the preservation of the endodontically treated roots in the case of an overdenture. The abutment teeth are prepared to a dome shape on the master cast. Denture teeth are set and waxed to the cast.

On delivery, the overdenture abutments are prepared first, then the teeth to be removed (if any) are extracted. The denture is adjusted and seated with the aid of PIP and disclosing wax until final seating occurs. The adaptation of the denture base to the abutment teeth can be customized with a autopolymerizing acrylic resin at a post delivery appointment.

OVERDENTURE ABUTMENT TOOTH PREPARATION

The abutment teeth should be dome-shaped with a convex occlusal surface. There should not be any undercuts below the tooth preparation in order to prevent tissue proliferation. The tooth preparation can be on cementum. It is necessary to smooth and polish the preparation to effect maximum plaque control. The endodontic access opening is filled with amalgam to prevent leakage.

The preparation is approximately 1-2 mm in height above the gingiva interproximally, but can be 2-3 mm in length on the facial and lingual surfaces. Avoid excessive occlusal reduction of the abutment tooth preparation or the gingival tissue may be pinched between the denture and the root surface.

INTERIM REMOVABLE PARTIAL DENTURES

The Glossary of Prosthodontic Terms defines an interim removable partial denture as a dental prosthesis to be used for a short interval of time for reasons of esthetics, mastication, occlusal support, convenience, or to condition the patient to the acceptance of an artificial substitute for missing natural teeth until more definitive prosthetic therapy can be provided. The patient should be advised that an interim RPD is designed to be used for only a short period of time and is a part of a total treatment plan. Therefore, these patients must be screened by Oral Diagnosis and evaluated in the treatment planning clinic. Instituting interim treatment without a comprehensive treatment plan is generally a mistake unless the treatment is done for diagnostic purposes.

Distinctions made in the Glossary of Prosthodontic Terms for the different names of Interim RPDs are:

PROVISIONAL RPD - The preferred term in the Glossary is Interim RPD.

TRANSITIONAL RPD - is a removable partial denture that is progressively enlarged to replace extracted teeth and will be replaced when the tissues are healed.

TREATMENT RPD - is a dental prosthesis used for treating or conditioning the tissues that are called upon to support and retain a denture base.

IMMEDIATE RPD - is fabricated for placement immediately after the removal of natural teeth.

The design of the interim RPD must be outlined on the diagnostic cast. The basic decisions regarding which teeth are to be kept or removed, healing time after the extraction of teeth, periodontal therapy, operative restorations, and fixed prosthodontic restorations must be made prior to constructing the interim RPD.

A patient's existing RPD may be converted to an interim partial denture by adding prosthetic teeth to replace extracted teeth or teeth reduced for overabutments. Although some patients can do without their RPD while a new one is constructed, most will want extracted or modified teeth replaced. This is especially true if their RPD replaces missing anterior teeth. An alginate over impression is made with the existing removable partial denture in the patient's mouth. The impression and the partial denture are removed and the negative tooth impressions (the teeth to be extracted) are filled with tooth colored autopolymerizing acrylic resin and allowed to cure. The remainder of the impression is filled with plaster to create the master cast. The new acrylic resin teeth are then joined to the partial denture with pink repair resin (Perm®) and a flange is created, if necessary.

The patient's teeth are extracted and the interim RPD is delivered and adjusted. If overdenture abutments are present, they are reduced and the endodontic canals are sealed with a cotton pellet and a temporary cement. The RPD is then fitted to these teeth using disclosing wax. This may require refitting of the RPD with Perm® to achieve good adaptation to the overdenture abutments.

CLINICAL APPOINTMENT I: IMPRESSIONS

Review the treatment objectives of the interim RPD with the patient and note them in the chart. As with a definitive removable partial denture impression, we must accurately record the minute details of all the remaining teeth and soft tissues. This can be accomplished with an alginate impression in a properly fitted stock tray. From this impression the master cast is produced.

A major disadvantage of an interim RPD is the lack of occlusal rests or vertical stops. Nineteen gauge wrought wire is placed over the marginal ridges of selected occlusion free areas of teeth to prevent tissue impingement. (If necessary occlusal and incisal rests are prepared according to the final RPD design)

One step that will aid in the fitting of an interim RPD and reduce the delivery appointment time is to selectively block out undesirable undercuts on the master cast and duplicate it.

CLINICAL APPOINTMENT II: CR RECORDS/SELECT TEETH

The duplicated cast is then articulated and mounted using a facebow transfer and a maxillo-mandibular record. The maxillary cast is mounted on an articulator with a facebow transfer. A record base is required for the facebow transfer if the maxillary arch is edentulous bilaterally. If there are sufficient teeth to positively articulate the maxillary and mandibular casts without rocking the casts can be hand-articulated, otherwise record bases and occlusion rims are required to mount the mandibular cast. The record bases and casts must be luted together with sticky wax before the mounting plaster is applied.

Once the dental casts are articulated, the correct shade and mold of plastic teeth are selected.

The denture teeth are set and waxed for a wax try-in. The interim RPD is waxed up and processed.

CLINICAL APPOINTMENT III: TRY-IN

A try-in of an interim RPD can only be done if there are record bases to support the teeth. The shade, size, and position of the teeth are evaluated and accepted by the patient. At this time, the vertical dimension of occlusion and centric relation are verified.

LABORATORY CONSIDERATIONS

A mandibular interim RPD gets its strength from the bulk of acrylic in the lingual vestibule. The strength of the lingual acrylic resin can be increased by incorporating a 1/2 round 12-gauge wire in the lingual contours of the wax-up. The laboratory has this wire.

Wrought wire clasps are placed on interim RPDs for retention. Eighteen gauge wrought wire is usually used on the molars and 19 gauge wrought wire is usually used on bicuspid and anterior teeth.

CLINICAL APPOINTMENT IV: DELIVERY

Delivery of an interim RPD requires adaptation of the denture base and borders to the hard and soft tissues of the mouth. This procedure is accomplished with PIP and disclosing wax. The occlusion must be evaluated and adjusted. This is generally done intraorally using silk ribbon and shim stock (do not forget excursive movements). When the denture has more than 5 prosthetic teeth or there is greater than a 1 mm increase in VDO, a remount procedure may be required.

CLINICAL APPOINTMENT V: POST DELIVERY CARE/RECALL

Home care instructions are important for interim RPDs because their major support is derived from the soft tissues. A 24 hour recall appointment is required to evaluate the tissues and make adjustments. A one-week recall is usually necessary depending on the results of the 24 hour recall. The reason for an interim RPD and the need for strict oral hygiene must be clearly understood by the patient. Once the objectives of the interim RPD are accomplished, the treatment for the patient should be continued to completion with a definitive fixed or removable partial denture.

RELINES OF COMPLETE DENTURES

There is a tendency to overlook the patient evaluation when a patient has been assigned for a reline procedure. Update the chart with a new health history, head and neck examination, evaluation of hard and soft tissues and evaluation of the denture and/or overdentures abutments (including probing depths) prior to starting the reline procedure.

RELINING VERSUS. REBASING

Relining refers to replacing the tissue surface (1 to 2 mm) of the denture base. Rebasing refers to replacing all of the pink denture base material. Only the old teeth remain after a rebase.

If the current denture has problems on the inside and the outside, then it needs to be remade, not relined or rebased. An example is severe tooth wear (outside) in combination with a poor fit (inside) or poor esthetics (outside) and a poor fit (inside). Broken or repaired denture teeth (outside) and looseness (inside) is an indication for a remake.

DIAGNOSIS

Relining is indicated when the form of the mouth has changed due to ridge resorption and no longer fits the denture. Common complaints are looseness and instability during function. Instability due to occlusal discrepancies, teeth set too far facially, mobile tissue, restricted tongue space, incorrect VDO, lack of saliva, and heavy unilateral function cannot be remedied by a reline.

Once you have determined that the problem is instability due to changes in the denture supporting areas, you must decide if the denture can be relined. The following are important factors:

- The condition of the existing denture teeth
- The existing vertical dimension of occlusion.
- The thickness of the denture bases.
- The harmony of occlusal contacts in centric relation.
- The adequacy of flange extensions.
- The position of the occlusal plane.

CONDITION OF EXISTING TEETH

The teeth have worn to the point that there are no facial or lingual embrasures. The teeth have no evidence of secondary anatomy creating an absence of triangular and marginal ridges. These conditions preclude relining and remaking of the denture.

VERTICAL DIMENSION OF OCCLUSION

Excessive VDO causes many reline failures. If the VDO of the existing dentures is correct, space for the reline material **MUST BE** created by removing acrylic resin from the tissue surface.

THICKNESS OF THE DENTURE BASES

If the VDO is correct and the denture bases are so thin that the denture base cannot be relieved, relining is not possible. If you are unsure about the VDO and cannot create space for the impression material, be sure to explain to the patient that relining may not succeed and that

a new denture may have to be fabricated.

HARMONY OF OCCLUSAL CONTACTS IN CENTRIC RELATION

The occlusion must be reasonably good. Do not rely on relining to correct major occlusal problems. Remount the dentures with a facebow transfer and centric relation record, then equilibrate before relining. Some occlusal discrepancies can be corrected with advanced techniques (e.g. making a centric relation record before or after making the reline impression). See your instructor for guidance on remounting and repositioning procedures.

Adequacy of flange extensions

Gross under extensions do not make relining impossible, but increase the difficulty. Use modeling compound to correct the under extensions prior to impression making. If a functional impression is planned, use modeling compound to correct the under extended borders, then use a quick set plaster cast to add a new, corrected border of autopolymerizing acrylic resin.

COMPREHENSIVE CHAIRSIDE RELINES

This type of reline is not recommended. So many steps of denture construction are incorporated into this one procedure that the danger of error is exceptionally high. It is easy to incorrectly orient the denture, increase the vertical dimension of occlusion, and create occlusal problems. When errors do occur, correction is difficult and very time consuming. Even when perfectly done, the reline material may be unpleasant for the patient and frequently exhibits a porous surface.

A modified chairside reline is done in limited areas to readapt immediate dentures following extractions. This procedure is also used with overdentures to readapt the overdenture to the overdenture abutments after reduction of the teeth. This type of reline involves relining only small areas, usually where teeth have been extracted recently, and also areas around overdenture abutments. Relieve the tissue side of the denture 1 mm and condition the relieved area with monomer before attempting the reline. Autopolymerizing resin (Perm®) is used at the chair. Follow the manufacturer's instructions for mixing and place the material on the prepared area. Wait until the mixed material has a dull surface then seat the denture in the mouth and have the patient close and swallow. Instruct the patient to leave their teeth lightly together. Wait for two minutes, (by the clock) then remove the denture and place it in a pressure pot at 20 p.s.i.

LABORATORY PROCESSED HARD RELINES

Processed relines yield a strong, dense acrylic resin with little porosity. Processed relines are preferred over chairside relines. When properly performed with a matched acrylic resin, the original denture and reline materials are indistinguishable. The patient will be required to do without the denture for 1 day. Relines are returned at 10:00 a.m. the day following the impression, if they are submitted before 1 p.m. Always check with the patient and the laboratory about scheduling before beginning a reline procedure.

LABORATORY PROCESSED SOFT RELINES

Processed soft relines are used for some selected patients who cannot tolerate a hard acrylic resin denture base. Selection of these patients requires diagnosis and treatment planning by a full time faculty. The patient will be required to go without their denture for two days. The professional laboratory will return soft relines at 10:00 a.m. two days following submission to the laboratory. Always check with the patient and the laboratory about scheduling before beginning a reline procedure.

RELINING PROCEDURES: STATIC IMPRESSIONS

Remove undercuts in the denture base. Relieve the tissue surface of the denture using depth cuts with a #8 round bur across the entire denture base. This procedure will create a depth of 1 mm. Then remove the “islands” of remaining acrylic resin from the denture base. Border mold the denture with modeling plastic. Place holes in the denture (#6 round bur) over movable tissues and in areas farthest from the borders. Place an impression adhesive on the denture base and borders and let it dry.

All undercuts on the tissue side of the denture must be removed prior to attempting the impression to allow for removal from the master casts during laboratory procedures. Make the impression with a free-flowing material such as a light bodied PVS impression material. Impressions should be made with the teeth in light centric relation contact. Evaluate the impression surface, the VDO, and the centric relation contact before dismissing the patient. Note: the denture may shift anteriorly creating a malocclusion. If this occurs, the impression must be stripped out and remade.

RELINING PROCEDURES: FUNCTIONAL IMPRESSIONS

Prepare the denture by removing undercuts and creating space for the functional reline material. Border molding is generally used only in areas of gross under extension. Make closed-mouth impressions with tissue conditioning material. (The occlusion you see in the mouth while making the impressions is the occlusion you will see in the processed dentures.) Mix the material according to manufacturer's instructions. Evaluate the VDO and centric relation position. Remove the dentures and inspect the tissue surfaces. Trim away gross excesses with a sharp knife or hot wax spatula. Re-appoint the patient for the following day. After 24 hours, reevaluate the patient's speech, appearance, occlusion, and comfort.

SPEECH

The patient's speech should be acceptable. Carefully check the closest speaking space (have the patient say: 'church', 'judge', 'Mississippi' and count from 1 to ten, etc.). Contact of the teeth during speech indicates an excessive VDO.

APPEARANCE

It is almost impossible to relin a maxillary denture without having the denture move down-

ward and forward to some extent. Be sure the patient is satisfied with his/her appearance. Strip the denture, provide additional relief, and start over if the patient says that the teeth seem too long or too far to the facial.

OCCUSION

Occlusal contacts in centric relation should approach ideal. Minor discrepancies can be corrected at delivery using a patient remount/equilibration procedure.

COMFORT

The patient should be comfortable and willing to proceed with the procedure. If soreness remains, it will usually occur in areas where the tissue conditioner is thin. Remove the tissue conditioner over thin, sore areas. Relieve the underlying acrylic resin. Repair the liner with a new mix of tissue conditioner. If the areas are extensive, remove and replace the entire liner.

Repeat the recall and evaluation process until the patient is comfortable. If a processed soft liner is indicated then, submit the finalized functional impression to the laboratory and prescribe “shim technique” to convert the temporary soft liner to a processed soft liner. The shim technique is a specialized procedure for processed soft liners that produces hard lingual borders and an controlled thickness of processed soft liner over the ridge crest of the relined denture.

POST-INSERTION ADJUSTMENTS

The need for post-insertion adjustments is generally greater with the static impression technique than with the functional method. A 24 hour and a one-week adjustment should be scheduled when the delivery appointment is scheduled for all relined patients. Functional relines require that the patient be seen four (4) days in a row:

- Day 1: Place the functional impression material in the denture.
- Day 2: Evaluate and finalize the relined.
- Day 3: Deliver the denture.
- Day 4: Do the 24 hour recall.

RELINES OF REMOVABLE PARTIAL DENTURES

A removable partial denture can function under two different sets of circumstances. It may act much like a fixed prosthesis if it is tooth-supported (Class III, & IV) In this case there is very minimal movement of the partial denture during function. If an RPD has a distal extension base (Class I, or II), it may behave as a hybrid; part tooth-supported (like a fixed bridge) and part tissue-supported (like a complete denture). When tissue supported prostheses are in function they move. The amount of movement of the denture base is linearly proportional to the distance from the terminal abutment tooth.

This phenomenon occurs because the most posterior portion of a partial denture is influenced more by tissue support than by tooth support. This hybrid situation requires more attention by the dentist during relining and precludes the use of a “functional” impression. Only “static” impressions should be utilized to reline a Class I, or II RPD. The impression should be made with the rests fully seated without putting pressure on the distal extension base. Do not allow the patient to occlude during impression making. The distal extension area of a partial denture, posterior to the axis of rotation, will move tissueward, if pressure is placed on it. Then all rests and plating anterior to the axis of rotation will not be seated properly. This situation causes food impaction under the rests and plating, and requires another reline procedure.

If the rests are not seated fully during impression making, then only the tissue surfaces will contact when the relined partial denture is seated in the mouth. Excessive pressure on the tissues is required to fully seat the rests. In this situation the tissues are doing all the work and the teeth almost none. The desired result is to make a reline impression that will result in contact of both tissue-supported surfaces and tooth-rest surfaces simultaneously. This allows for broad stress distribution of the RPD during function and minimizes damaging stress to both hard and soft tissues. All relines of distal extension partial dentures should be remounted and equilibrated using a Mellott’s metal or die stone remount cast. And all RPD’s that oppose a complete denture should be remounted.

REPAIRS

The longevity of a prosthetic restoration cannot be guaranteed because living tissue changes while acrylic resin does not. The need to repair a removable partial denture or a complete denture will arise. The patient will require immediate attention so they can continue to function in public.

As with any diagnostic procedure, the health history must be updated including a clinical evaluation of the tissues and the fit of the prosthesis. Most dental restorations fail for a reason, and ultimately, the cause must be found to prevent a recurrence. Breakage of a prosthesis is commonly due to an accident that will not be expected to happen again, so a repair will usually suffice. However, if the breakage is due to poor design, faulty construction, occlusal interference, or has occurred repeatedly, the denture should be modified or remade. Hyperocclusion and poor tissue adaptation are frequent causes of breakage. The occlusion should be evaluated before and after each repair. Failures can be due to a failure of the material, change in occlusion, bruxism, neglect of tissue changes, or accidents. The responsibility for the cost of the modification or remake will depend on the length of service and the reason for failure.

BROKEN CLASP ARM

A broken clasp arm may result from excessive flexure, structural failure, over adjustment by the dentist, or careless handling by the patient. An alginate impression should be made with the RPD in place and removed with the impression. The impression is then poured up in die stone after blocking out undercuts. A broken retentive clasp may be replaced with an 18 gauge wrought wire embedded in the acrylic resin base. The wrought wire is bent to conform to

the facial surface of the tooth and laid in a channel cut in the acrylic resin base. The clasp is secured in place by sticky wax. Then autopolymerizing resin is used to attach it to the denture base. The repair is placed in a pressure pot for 10 minutes at 20 p.s.i. If there is no acrylic resin in close proximity, the wrought wire may be soldered to the metal base.

REPLACEMENT OF A BROKEN OR LOST TOOTH

Lost or broken teeth are usually the result of an accident or hyperocclusion. If there is a clean separation of the entire tooth from the denture base, the loss may be due to wax contamination from improper boil out during processing. Retention is cut into the tooth and acrylic denture base from the lingual surface. To replace a tooth, set the original or new denture tooth into the space. Stabilize the tooth with sticky wax. The original lingual contour is restored with autopolymerizing resin and cured for 10 minutes at 20 p.s.i.

DENTURE RESIN BASE FRACTURES

Fractures may be due to patient handling, hyperocclusion, faulty construction, or to tissue changes. To repair a simple fracture, the denture base must be aligned and stabilized with sticky wax and support braces or Superglue®. A stone cast is poured inside the reassembled denture after blocking out tissue undercuts. A groove is cut following the fracture line with dove tail cuts on both sides of a groove perpendicular to the fracture line at 5 mm intervals. Overfill the prepared grooves with autopolymerizing resin and place in a pressure pot for ten (10) minutes at 20 p.s.i. When fully polymerized, separate, trim, and polish.

DISTORTION OR BREAKAGE

Distortion or breakage of other components of a removable partial denture that are properly designed and fabricated may occur from misuse by the patient, mechanical fatigue, or porosity. Generally, failure of major components means the prosthesis has to be remade. Major connectors can sometimes be soldered, but reapproximation of the major connector is difficult and the result may be less than optimal.

DELIVERY OF A REPAIRED DENTURE

Delivery of a repaired denture is similar to the delivery of a new prosthesis. If the tissue surface has been altered, it should be evaluated with pressure indicating paste. If teeth have been replaced, the occlusion must be evaluated and adjusted in centric relation and excursions. If there is a large occlusal discrepancy, a patient remount and equilibration must be done.

SEMI-PRECISION ATTACHMENTS

I.C. ATTACHMENTS

An I.C. attachment is an inexpensive, intracoronal attachment used for retention on removable partial dentures. It is a spring loaded bullet shaped plunger housed in a metal cylinder. It is used for retention instead of a conventional retentive clasp. An I.C. attachment (anterior small #806001) is 5.2 mm in length and 2 mm in diameter. Normally, it is placed into a dimple on the distal guide surface of the most anterior abutment tooth. The dimple is .25 mm deep (0.01") and may be placed into enamel, amalgam, or gold. The attachment provides approximately the same amount of retention as a clasp, but is invisible because it lies under the first prosthetic abutment tooth and projects through the guide plate. The cost of these attachments is approximately \$50 dollars each and they can be expected to last 2-4 years depending on wear.

INDICATIONS:

I.C. attachments are normally indicated in cases where esthetics is important and the display of metal clasps would be unacceptable to the patient. This situation occurs most frequently in younger patients with a high lip line where canines or premolars are the anterior abutment teeth. A minimum of four mm of occlusal gingival space is needed to place the attachment.

Although they can be used on any classification of removable partial denture, they are easiest to use on the a Kennedy Class 3, modification 1 with first premolars as anterior abutments. The other classifications require special design considerations so that the RPD does not fall off the back of the abutment tooth. This is usually achieved by placing a minor connector on the mesial of the anterior abutment tooth.

CASE SELECTION:

Attachments must be planned at treatment planning clinic and the patient must be informed of the additional time and cost. I.C. attachments are normally placed on the RPD framework at the framework try-in appointment.

PLACEMENT OF THE ATTACHMENT:

- Try in the framework and adjust the occlusion
- Thin the guide plate with a green stone, disk, or carbide bur
- Use a #4 round bur to drill a hole low on the guide plate
- Place the I.C. attachment through the hole. Relieve the shoulder area around the hole is necessary to allow the attachment to project .5 mm through the guide plate. Remove the attachment.
- Place the framework in the mouth. Use the hole in the guide plate as a jig to dimple the distal of the abutment tooth with a #4 round bur to a depth of .25 mm (.01").
- Remove the framework from the mouth and check the dimple depth with an explorer. Deepen if necessary.

- Place the framework on the master cast and again, using the hole in the guide plate as a guide, dimple the stone abutment tooth with a #4 round bur.
- Remove the framework, Vaseline® the cast around abutment tooth, then replace the framework on the cast.
- Place the I.C. attachment into the dimple on the cast and secure it to the framework with Duralay®. Do not allow the Duralay® to slump and pull the attachment away from the tooth. After the Duralay® sets remove the framework from the master cast.
- Try the framework in the patient's mouth. The attachment should click into place. Test the retention by pulling down lightly on the framework.
- If the retention is inadequate, check to see that the attachment is protruding through the guide plate and has not moved back out during the Duralay procedure. In necessary, remove the attachment, deepen the dimple in the natural tooth and stone tooth, and reattach with Duralay® until adequate retention is achieved.
- Set the prosthetic tooth over the attachment. Hollow grinding of the prosthetic tooth will be necessary using silk ribbon as a guide to reduction.
- Inform the laboratory of the presence of the I.C. attachment. The laboratory will remove the abutment tooth prior to flasking and place plaster against the guide plate to prevent acrylic resin from entering the attachment.

TROUBLE SHOOTING

RPD DOES NOT GO TO PLACE AT DELIVERY:

- Use PIP to check plastic flanges which may not allow the RPD to go to place due to tissue undercuts or because of impingement of plastic adjacent to the guide plate with the abutment tooth.
- Check I.C. attachment by depressing it with mirror handle. If it does not depress, wax or acrylic resin may have gotten into the plunger. Warm the plunger gently with a Hanau torch and depress the plunger. A small ring of plastic may pop out of the attachment or it may be cleared of wax and begin to function properly.
- Check the projection of the plunger out of the guide plate. If the plunger is set too far out, its shoulder may hit on the marginal ridge of the abutment tooth and resist depression. Beveling the marginal ridge of the abutment tooth or the attachment usually solves this problem.

RPD HAS INADEQUATE RETENTION

- Plunger is stuck due to wax residue or acrylic resin. Warm gently with Hanau torch and depress with metal instrument.
- Plunger does not project out of guide plate adequately. Remove and reset the attachment.
- Plunger tip was polished off because lab technician was not aware of I.C. attachment. Replace it.