

Conference of Operative Dentistry Educators

(CODE)



REGIONAL REPORTS

FALL 2001

<http://netserv.unmc.edu/code/codeFrame/html>

TABLE OF CONTENTS

Forward	1
Origins of CODE	3
CODE Advisory Committee	5
Regions and Schools	6
2001 Agenda	7
Regional Reports:	
Region I (Pacific)	1.x
Region II (Midwest)	2.x
Region III (South Midwest)	3.x
Region IV (Great Lakes)	4.x
Region V (Northeast)	5.x
Region VI (South)	6.x

Conference of Operative Dentistry Educators (CODE)

Forward - Larry D. Haisch, D.D.S.

National Director

Early in 2000, the Conference of Operative Dentistry Educators (CODE) held a brief national "discussion type" meeting for educators and other interested individuals who were attending the annual meeting of the Academy of Operative Dentistry. The Academy graciously provided the space and time - thank you. As a result of the discussions, a meeting of CODE has been scheduled for **Thursday, February 21, 2002, 4:15 - 6:00 pm, State Room, Fairmont Hotel** in conjunction with the Academy meeting in Chicago. CODE will also meet following the business meeting of the Operative Section of ADEA in San Diego, Tuesday pm, March 5, 2002.

CODE was referenced by speakers at the 2001 annual meeting of ADEA as an organization which is working to advance current operative concepts/principles via dialogue with other entities. Of note is the effort to encourage members of the licensure examining boards to attend the Fall Regional CODE meetings. Thus positive discussion occurs which has resulted in modifications to licensure examinations which are more reflective of the current operative principles being taught. I ask all to spread the word about CODE. An organization of Dental educators communicating with each other, working together, cooperating and standardizing, when appropriate, their teaching efforts in Restorative Dentistry with the emphasis on Operative Dental Education.

The dues increase authorized for implementation in 2001 has reduced the cost to the National Director's institution for conducting the business of CODE. I attended the Region I meeting hosted by Ralph Leusing at USC. Again, a great meeting with good discussion and sharing of information. Plans are to attend the Region IV meeting in 2002.

The web site (<http://netserv.unmc.edu/code/codeFrame/html>) is the location of "all you wish to know and then some" for CODE. Please check that site for a listing of meetings, agendas, directors, members and so forth. Thanks to Dr. William Johnson for being the webmaster.

Thank you to all who make the organization what it is and accomplishes - the members, directors, meeting hosts, (Drs. Ralph Leung, William Brackett, Ned Turner, Roma Jasonevicius, Richard Liehtenthal and Paul Osborne), the operative Section and others.

The Section of Operative Dentistry of the American Dental Education Association has “oversight” responsibility for sustaining and managing CODE.

- The national director will be appointed by the executive council for a three-year term, renewable not to exceed two consecutive terms.
- The director will be selected from a list of one or more individuals nominated by the CODE Advisory Committee after input from the regions.
- The director will perform the functions and duties as set forth by the council.
- The director will be a voting member of the council who will be expected to attend regional CODE meetings and the annual meeting of the council and section.

A CODE Advisory Committee will assist the national director with his/her duties.

- A CODE Advisory Committee will consist of one member (regional director) from each of the six regions plus 1 to 2 at-large members.
- Each regional director is selected by their region. The at-large member(s) may be selected by the national director and/or the executive council.
- The terms are three years, renewable not to exceed two consecutive terms.
- The national director serves as chair of the Advisory Committee.

The annual CODE regional meetings will serve as the interim meeting of the section. Some section business may be conducted at each CODE regional meeting as part of the national agenda.

Regional Directors:

- Will be a member of ADEA and the section of operative dentistry
- Will oversee the conduct and operation of CODE in their respective region while working in concert with the national director
- Will have communication media capabilities including e-mail with the capability of transmitting attachments
- Attend the region’s meeting
- See that meeting dates, host person and school are identified for the following year
- Do follow-up assist on dues “non-payment” by schools
- See that reports of regional meetings are submitted within 30 days of meeting conclusion to the national director
- See that individual school rosters (operative based) are current for the region
- Identify a contact person at each school
- Assist in determining the national agenda
- Other, as required

ORIGINS OF C.O.D.E (Conference of Operative Dental Educators)

Project ACORDE (A Consortium of Restorative Dentistry Education)

The date usually cited as the starting point for the development of Project ACORDE is 1966. That year, in Miami, The Operative Dentistry Section of the AADS formed a committee charged to plan for the cooperative development of teaching dental materials.

In July of 1971, the Dental Health Center, San Francisco, invited faculty from 14 dental schools to explore the feasibility of reaching consensus of a series of operative dental procedures. The outcome of the meeting suggested that it was feasible to achieve broad-based agreement on basic procedures: task analyses could be developed in which consensus could be reached on essential details of methods and instrumentation. The Project ACORDE committee was charged with the responsibility for coordinating curriculum development efforts on a national level in November of that year. Prominent in this project development were Bill Ferguson, David Grainger and Bob Wolcott.

The Broad Goals and Functions of this committee were:

1. To gain agreement among all participating dental schools on the teaching of operative dentistry functions and gain acceptance by all schools.
2. To produce materials which can be universally accepted and utilized for teaching dental students and expanded function auxiliaries.

During 1974, a 15 module package entitled Restoration of Cavities with Amalgam and Tooth-colored Materials was presented.

The preparation package entitled Cavity Preparations for Amalgam and Tooth-colored Materials became available for distribution in March of 1976.

Project ACORDE was found to have produced three major benefits for dental education:

1. It opened new channels of communication among dental educators.
2. It suggested uniform standards of quality for the performance of restorative skills.
3. It produced numerous lesson materials which were useful both for teaching students and as models for developers of other lessons.

The benefit that was most frequently cited by dental school faculty was communication. The primary example of the communication begun by Project ACORDE which has lasted well beyond the initial project is CODE (Conference of Operative Dentistry Educators). CODE has as its goal the continuation of meetings for the purpose of information exchange among teachers of operative dentistry. Regional CODE meetings are held annually with minutes of each session recorded and sent to a national director for distribution to all participating institutions. This system is a direct spin-off of Project ACORDE.

The first annual session of CODE was held in 1974/75.

The Early Years (1974-1977)

As founding father of the concept, Robert B. Wolcott of UCLA assumed the role of national coordinator and appointed Frank J. Miranda of the University of Oklahoma as national secretary. A common agenda to be provided to all six regions was established at this time. The first regional meetings were held in the winter of 1974. During the first three years of operations each region devised a system of rotation such that a different school hosted the regional meeting each year, providing a greater degree of motivation and bringing schools closer together in a spirit of fellowship and unity. Each region submitted suggestions for future agenda, thereby insuring a continued discussion of interesting and relevant topics. A collection of tests (test bank) was started in early 1976 which consisted of submitted written examination questions on specified topics that were compiled and redistributed to all schools.

The Transition Years (1977-1980)

The first indication that the future of CODE was in jeopardy came in 1977, the first year that a national report could not be compiled and distributed. As the result of the efforts of a committee chaired by Dr. Wolcott, the original concept was renewed in 1980. Its leadership had been transformed from the structure of a national coordinator and secretary to a standing subcommittee under the auspices and direction of the Section of Operative Dentistry of the AADS.

The Reaffirmation Years (1997 - 1998)

During the 1997 meetings of both the Operative Dentistry Section Executive Council and the Business meeting of the Section, interest was expressed about reorganizing CODE and aligning it more closely with the Section. During the following year fact finding and discussions occurred to formulate a reorganization plan. The plan was submitted for public comment at the 1998 meeting of the Operative Dentistry Section Executive Council and the Business meeting of the Section. At the conclusion of the business meeting the reorganization plan was approved and implemented.

The Future of CODE

The official sponsorship by the Section of Operative Dentistry of ADEA (formerly ADDS) and the revised administrative structure of CODE are both designed to insure its continuance as a viable group. The original concepts, ideas and hopes for CODE remain unchanged and undiminished. Its philosophy continues to be based on the concept of dental educators talking with each other, working together, cooperating and standardizing, when applicable, their teaching efforts and generally socializing in ways to foster communication. These is every reason to believe that organizations such as CODE, and those developed in other fields of dentistry, will continue to crumble the barriers of provincialism and provide the profession with a fellowship that is truly national in scope.

National Coordinators/Directors

Robert B. Walcott (UCLA)	- 1974 - 1982
Thomas A Garmen (Georgia)	- 1982 - 1986
Frank Miranda (Okalhoma)	- 1986 - 1989
Marc Gale (Florida)	- 1989 - 1998
Larry Haisch (Nebraska)	- 1998 to present

CODE ADVISORY COMMITTEE

	Region	Regional Director	Term (term - 3 years)
I	Pacific	Dr. Edmond R Hewlett UCLA Los Angeles, CA 310-325-7097 eddyhedent.ucla.edu	2000-2002
II	Midwest	Dr. R. Scott Shaddy Creighton University Omaha, NE 402-280-5229	2000-2002
III	South Midwest	Dr. Alan H Ripps Louisiana State University New Orleans, LA 540-619-8548 aripps@lsuhsc.edu	2001-2003
IV	Great Lakes	Dr. Bob Rashid Ohio State University Columbus, OH 614-292-3071 rashid.1@osu.edu	2001-2003
V	Northeast	Dr. Richard Lichtenthal Columbia University New York, NY 212-305-9898 rml1@columbia.edu	2002-2004
VI	South	Dr. Kevin Frazier Medical College of Georgia Augusta, GA 706-721-2881 kfrazier@mail.mcg.edu	2002-2004
II	At-Large	Poonam Jain Southern Illinois University Alton, IL 618-474-7073 pjain@siu.edu	2002-2004
II	National Director	Dr. Larry D. Haisch National Director University of Nebraska Lincoln, NE 402-472-1290 lhaisch@unmc.edu	2002-2004

Regions and Schools

<p><u>Region I (Pacific) - 9</u></p> <ul style="list-style-type: none"> U Loma Linda U Alberta - C U British Columbia - C U UCLA U UCSF U Oregon U Pacific U USC U Washington 	<p><u>Region II (Midwest) - 10</u></p> <ul style="list-style-type: none"> U Colorado U Creighton U Iowa U Manitoba - C Marquette U Minnesota U UMKC U Nebraska U Saskatchewan - C U Southern Illinois
<p><u>Region III (South Midwest) 7</u></p> <ul style="list-style-type: none"> U Baylor U Louisiana State U Mississippi U Oklahoma U Tennessee U Texas, Houston U Texas, San Antonio 	<p><u>Region IV (Great Lakes) 10</u></p> <ul style="list-style-type: none"> U Case Western U Detroit U Illinois U Indiana U Michigan U Ohio State U Pittsburgh SUNY - Buffalo U West Virginia U Western Ontario - C
<p><u>Region V (Northeast) - 18</u></p> <ul style="list-style-type: none"> U Boston U Columbia U Connecticut Dalhousie - C U Harvard U Howard Laval - C U Maryland U McGill - C Montreal - C U New Jersey U NYU U Pennsylvania U SUNY - Stony Brook U Temple U Toronto - C U Tufts U US Naval Dental School 	<p><u>Region VI (South) - 11</u></p> <ul style="list-style-type: none"> U Alabama U Florida U Georgia U Kentucky U Louisville U Meharry U North Carolina U Nova Southeastern U Puerto Rico U South Carolina U Virginia

U = Paid Member - December 2001

C = Canadian

65 Schools (10 Canadian, 55 United States)

The agenda was established after review of suggestions from the membership and the reports of the 2000 Fall Regional meetings. Thank you to the Regional CODE Directors for making recommendations and suggestions to establish the 2001 Agenda.

2001 NATIONAL CODE AGENDA

(Please cite the evidence were applicable)

I. Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)

Can there be or is there a combination of both - requirements and comprehensive care?

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

What is your method for determining and maintaining competency?
Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or "soft start" curing (stepping, ramping, pulsing)?

What evidence are you using to support the utilization (if doing so) of this curing approach vs the conventional method?

IV. **Magnifiers**

Does your school require students to have magnification?

If so, are they required to have the same specific magnifiers? Please identify type.

If not used, is a certain level or quality required? Please indicate.

Which year(s) and in which disciplines are they being utilized?

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

Please list references on benefits or problems with the use of magnification.

List other benefits or problems seen/perceived with magnification.

V. **Regional CODE Agenda**
(please report on them)

VI. **National CODE Meeting**

A National CODE meeting will be held Thursday, February 21, 2002 4:15-6:00PM at the Fairmont Hotel in Chicago, Illinois. This is in conjunction with the annual meeting of the Academy of Operative Dentistry. Please submit 1-2 items for consideration for the 'agenda' of the National Meeting. Suggestions as to how to make this brief meeting productive and efficient are needed.

VII. **Suggestions for CODE.**

What can the organization do to improve its effectiveness?

What is suggested to improve the Web site?

<http://netserv.unmc.edu/code/codeFrame.html>

Other suggestions?

REMINDER:

Invite your colleagues who are Licensure Board examiners and military colleagues who head/instruct in military based dental education programs to your Regional meetings.

The terms of the Directors of Regions V (northeast) and VI (South) will expire. They are eligible to serve one additional three-year term. Please see that a Director is selected and inform the National office of your selection.

It would be helpful (and timely) if each Region would select next year's meeting site, date or tentative date at the close of your Fall Regional CODE meeting.

The Regional meeting reports are to be submitted to the national Director in **publishable format** as an attachment to e-mail. Mail a hard copy of the report to the National Director. Both electronic and hard copy versions are to be submitted within thirty (30) days of the conclusion of the meeting.

The Enclosure #1 CODE Regional Meeting Report Form and the CODE Region # Attendees form are to be completed and submitted with the Regional Meeting reports. Forms are attached.

NOTE: Please have each school update the following information for the directory:

School name and mailing address

Individual names (full time), phone #, fax #, e-mail address of faculty who teach operative dentistry. (This could be individuals in a comp care program, etc. if there is no defined operative section of department.)

Include this information with the Regional Report all in an electronic file transmitted via e-mail plus the mailing of a hard copy and a disk to the National Office of CODE. (Sample attached).

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Lincoln, Ne 68583-0750

lhaisch@unmc.edu
Office: 402-472-1290
Fax: 402-472-5290

CODE REGIONAL MEETING REPORT FORM

REGION: _____

LOCATION AND DATE OF MEETING: _____

CHAIRPERSON:

Name: _____

Phone #: _____

Address: _____

Fax #: _____

E-mail : _____

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: _____

Phone #: _____

Address: _____

Fax #: _____

E-mail : _____

Date: _____

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC
College of Dentistry;

40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290 Fax: 402 472-5290 E-mail: lhaisch@unmc.edu

Also send the information on a disk and via e-mail with all attachments.

Please indicate the software program and version utilized for your reports.

CODE Region

Attendees Form

NAME	UNIVERSITY	PHONE #	FAX #	E-MAIL ADDRESS

CODE REGIONAL MEETING REPORT FORM

REGION: I (Pacific)

LOCATION AND DATE OF MEETING:

USC School of Dentistry Los Angeles, Ca

October 4-5, 2001

CHAIRPERSON:

Name: Dr. Ralph Leung

Phone #: (213) 740-1530

Address: 925 West 34th Street

Fax #: (213) 740-6778

USC School of Dentistry MC-0641

E-mail: rleung@hsc.usc.edu

Los Angeles, CA 90089-0641

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: UCSF School of Dentistry

Phone #:

Address: 513 Parnassus Avenue

Fax #:

San Francisco, CA 94143-0430

E-mail :

Date: TBA

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC
College of Dentistry;
40th and Holdrege Streets; Lincoln, NE 68583-0750.
Deadline for return: 30 Days post-meeting
Office: 402 472-1290 Fax: 402 472-5290 E-mail: lhaisch@unmc.edu
Also send the information on a disk and via e-mail with all attachments.
Please indicate the software program and version utilized for your reports.

SUMMARY OF RESPONSES TO NATIONAL AGENDA:

Region I

The USC School of Dentistry hosted the 2001 Region I CODE meeting on October 4-5. Due to the tragic events of September 11, representatives of several Region I institutions elected not to travel to the meeting, but productive discussions nonetheless ensued among colleagues from USC, UOP, LLU, UCLA, UBC WREB, and National CODE Director Larry Haisch.

The questions of requirements vs. comprehensive care generated much discussion on the issue of traditional pedagogy vs. Problem Based Learning (PBL). Dr. Michael Mulvehill, Chair of the Division of Primary Oral Health Care at USC, related that USC is currently undertaking a major curriculum reorganization which includes a complete shift to PBL across the curriculum. Dr. Lance Rucker shared the experiences of UBC after 5 years of PBL. Dr. Charles Shuler, Associate Dean, also provided insights for Academic Affairs at USC. Key points: cautions against becoming too polarized w/r to PBL format, i.e. occasional lectures can continue to be a useful means of acquiring knowledge; important to introduce skills learning early in curriculum to allow adequate skill maturation time; whether PBL or traditional, students still “need the reps” to develop clinical skills; immersion w/ med students for basic sciences (UBC, Harvard) vs. dental-specific curriculum from day 1 (USC); UBC reports no change in quantitative clinical production under PBL (approx. 110 amalgam and composite restorations per graduating student on average).

Other schools in Region I are generally continuing to maintain some degree of numerical requirements in clinical procedures, but OHSU is “in the process of converting from departmental requirements to levels of competency.” All schools are using procedure-specific exams administered periodically to assess clinical competency, and most are using simulated (non-patient) exams at least in some point in the curriculum. Additionally some (USC, LLU) are utilizing small “group practice” arrangements to promote comprehensive patient care.

Cubicle assignment modes range from block rotations (UBC), group practices (USC, LLU), discipline-specific rows of cubicles (UCLA, UOP), and individual students assigned to their own cubicles (OHSU).

Student lab work on clinic operative/fixed prosth. cases varies widely, ranging from 0% (UCLA, UOP) to 100% on single-unit cast gold (all other respondents), with varying amounts performed on PFM and FPD cases.

All schools are uniformly using conventional quartz-tungsten-halogen curing lights and traditional curing times for student cases.

Purchase of surgical telescopes by students is required at UCLA and optional, but recommended, at other schools. The relationship between magnification use and ergonomics is a special area of interest for Dr. Rucker, and he provides a substantial list of references.

**2001 NATIONAL CODE AGENDA
REGION I RESPONSES**

(Please cite the evidence were applicable)

I. Requirements vs. Comprehensive Care

**How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)**

- UBC:** Clinical requirements remain in use for periodontics and prosthodontics (very minimal for the latter, only to insure that all students have had at least one experience clinically in CDs, RPDs, and FPDs). This approach is not considered counter to patient-centered care, but can present logistical problems.
- LLU:** A graduating dental student typically completes about 15-20 comprehensive patient care cases as well as cases transferred from other students. Students are also required to have completed a minimum “points” requirement in each discipline, to ensure an overall minimum experience while still providing comprehensive care. The total minimum points required for Restorative is 600, out of a total of 1,500 clinic points.
- Students are also required to pass competencies in the following restorative disciplines: Class II amalgam, Class III, IV or V composite resin, complex amalgam, full gold crown, metal ceramic crown, fixed partial denture, senior gold (inlay, onlay, or partial veneer), Senior Competency Clinic Exams I and II. A minimum number of procedures in each restorative discipline is required prior to attempting the competency exam. A minimum pass of 80% is also required to pass the competency exam.
- USC:** Currently undergoing major curriculum reorganization from traditional model to Problem-Based Learning (PBL) model for entire 4-year curriculum. PBL system incorporates 24 school-wide competencies. A specific clinical skill set to be attained by students is defined for each year of the curriculum. (Current 4th-year class is continuing on traditional point-based system for clinical graduation requirements.)
- UCLA:** We continue to use the same approach that we’ve used for several years, namely, numerical requirements for procedures in the various clinical disciplines. Within this framework, students are responsible for the comprehensive dental care of each patient assigned to them.
- UCSF:** No response.
- OHSU:** We are in the process of converting from departmental requirements to levels of competency. In order to evaluate competency a minimum number of experiences will be necessary.

UOP: The same basic competency standards are maintained through all three years, including the preclinical operative course. During the first year of preclinical operative, "Practical" exams and instructor evaluations are based on a 0-9 score, with "5" representing the lowest score that could be considered "clinically" acceptable, and demonstrate satisfactory progress toward advancing to the clinic. The final course grade is not made until course completion after three quarters (although interim approximate grades are given after the 1st and 2nd quarter), and tables/graphs are made with total scores. Discussions are held with all 14 preclinical instructors to determine grades based upon the scores. "F" grades are unusual; generally these few students are identified early on and are offered remedial sessions on Saturdays in addition to tutoring from 2nd year students. The few students who cannot complete academic (generally) or technique courses (less common) are either asked to reapply in a successive year, or at times, a position may be held for them. "D" grades are next settled upon. Generally, these students have low practical exam scores, and have received less than a "5" on multiple occasions. These students must complete a 4th quarter of preclinical operative on their own time, completing projects assigned by the course directors, and passing four practical exams with no score lower than 5.

During second year clinics, operative instructors, who keep daily logs of competency, proctor students. Scores are based upon what a student should be doing by the *end* of the academic year. An 8 or 9 definitely indicates that the student is ready to move to the next grade (or graduate). 5-7 indicate increasing levels of satisfactory progress during earlier quarters of the given year. In addition, second year students perform a small number of competency cases, where they perform some operative treatment with an increased level of independence.

Third year students have a similar program, except that test cases and mock board tests (5 total) account for 60% of the student's grade for that year. Operative and group practice instructors all are responsible for competency grading.

UW: No response.

Can there be or is there a combination of both - requirements and comprehensive care?

UBC: Yes! LM didn't think so in 1995, but is less "militant" now against some component of clinical requirements. Opinions vary in the Operative division as to appropriateness and reliability of patient-treatment competency testing.

LLU: Yes (see previous answer).

USC: Our "requirements" will now take the form of competency exams. Students will prepare for competency assessment in advance by means of their daily work. Daily work becomes the base of a pyramid upon which students build and develop skill sets. Competency exams are thus tests of skill level. Within this framework, we are moving toward a comprehensive patient care approach, the specifics of which remain to be worked out at this early stage of our curriculum

reorganization.

UCLA: Per the description above, we contend that our system is that — a combination of requirements and comprehensive care. It presumes that the population of patients assigned to each student will present with dental needs adequate for the student to complete his/her clinical requirements. However, students are responsible for the comprehensive care of each of their patients regardless of the individual patient's needs.

UCSF: No response.

OHSU: Yes (see response to preceding question). We will require of minimum number of experiences.

UOP: UOP requires students to complete a certain threshold number of cases of different types. These levels are significantly lower than requirements of past years, but when cross-referenced with competency ratings, give the student an opportunity to demonstrate competency at an earlier date. When threshold levels are met, but competency scores are low or borderline, the student may be asked to complete additional cases.

Most care is given in a comprehensive care setting, although the staffing remains largely departmental. Group care coordinators work with 1/3 of each senior class and perform treatment planning in addition to less complicated fixed prosthodontic and operative procedures.

UW: No response.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

UBC: Own assigned cubicle only for orthodontic, pediatric, and some periodontal sessions. Assigned to block rotations for TDM, OM/OP, Geriatric dentistry, and special needs. For operative dentistry there are no discipline specific or rotation clinics.

LLU: Starting this summer, we have implemented a clinical experience modeled closer to a general practice. The D3 (third year), D4 (fourth year) and senior dental hygiene students have been divided into 10 general practice groups. Each group has a primary attending faculty member acting as mentors and group leaders. The D4 students have clinic priority on five half days and the D3 students have priority of four half days. Each group also includes three senior dental hygiene students who are responsible for the patients within that group. There are weekly group meetings scheduled on Friday afternoons, or at other times more convenient for the whole group, where they discuss cases, treatments, and procedures. Students are expected to be present 100% of their priority time, and should a patient cancel, they have the option of doing laboratory work, assist another group student, or do a procedure on a manikin.

Students also have scheduled block assignments that include a quarterly rotation through oral surgery, urgent care, pediatrics, and radiology.

- USC:** In November 1996 we adopted a group practice (GP) model, distributing the 3rd and 4th-year students among six GPs. Each GP consisted of 48 students from the traditional curriculum (24 3rd year + 24 4th year), with International Student Program (ISP) and PBL students being blended in. Comprehensive care approach, with faculty from every discipline assigned to each pair of GPs. Group dynamic (vs. “every person for themselves”), especially w/r to smaller PBL groups, has proven to be very positive. Students prefer group practices vs. more traditional “solo” practice, and patient complaints have lessened significantly. New curriculum will utilize verticalized groups (cells) of 32 students, eight each from years 1 – 4.
- UCLA:** Students go to a discipline-specific clinic.
- UCSF:** No response.
- OHSU:** Each student has his/her own assigned cubicles in which to manage his/her practice.
- UOP:** Students do not have a single assigned cubicle. During the second year, students are assigned to rows where classmates are performing similar disciplines. During the third year, students are divided into thirds alphabetically and assigned to group care coordinators in a general seating area in the main clinic. For convenience, however, removable prosthodontics, appointed endodontics, periodontal surgery and oral surgery are always provided in dedicated areas.
- UW:** No response.

What is your method for determining and maintaining competency?

Note: The 1999 Agenda asked “How is competency based operative evaluation determined?” This is an evolving area of experiences. Please respond accordingly for 2001.

- UBC:** Competency is determined largely in simulation. Graduated clinical entry process, with establishment of clinical competency followed by immediate access to (heavily supervised) patient care for the areas/domains of competence. Group managers help assure that student treatment assignments are coordinated with their established levels of competence.

Maintaining competency? Not sure what this is really intended to mean. We monitor numbers and types of clinical procedures completed by each student, both statistically and via Group Managers, as the students provide overall care for the assigned patients. The students must also pass a final written and oral care-based integrated exam (including operative and biomaterials issues) in the fourth and final year.

- LLU:** Students are required to pass competencies in the following restorative disciplines: Class II amalgam, Class III, IV or V composite resin, complex amalgam, full gold crown, metal ceramic crown, fixed partial denture, senior gold (inlay, onlay, or partial veneer), Senior Competency Clinic Exams I and II. A minimum number of procedures in each restorative discipline is required prior to attempting the competency exam. A minimum pass of 80% is also required to

pass the competency exam.

USC: There are four clinical examinations during the 3rd year (Amalgam, Composite, Cast gold preparation, and Cast gold cementation) and eight clinical examinations during the 4th year (two each of the previous 3rd-year exams).

UCLA: Competency is monitored and determined by a series of practical examinations as well as “Exceptional Performance Reports” (EPR’s).

Each student must complete competency examinations as follows:

- * Two fixed prosthodontics clinical examinations (Two single-unit cast restorations on clinic patients wherein the student completes designated steps without instructor assistance. An instructor evaluates each designated step, grades performance on a 1-to-5 scale, and then provides feedback regarding necessary modifications as needed.) Students are required to PASS.
- * Six operative clinical examinations (Class II or Class III restorations on clinic patients carried out under exam conditions as described above.) Students are required to PASS.
- * Four simulated fixed prosthodontics examinations (Typodont tooth preparations for a 3-unit fixed partial denture as performed on the California State Board Dental Examination.) Students are required to PASS.
- * One mock board examination, involving all clinical and simulated procedures as performed on the California State Board Dental Examination. Students are required to PARTICIPATE.

EPR’s are written at the discretion of individual instructors to document instances of exceptionally high or low competency. Copies are maintained on file at the departmental level.

Lastly, there are numerical requirement milestones that students must meet by the end of each academic quarter in order to receive a passing grade in clinical restorative dentistry for quarter. Meeting these milestones indicates timely progression toward graduation and serves to “flag” who are chronically deficient in requirements, prompting counseling by a clinic group director.

UCSF: No response.

OHSU: Overall consensus evaluation by assigned instructors based upon: (1) professional skills and judgement, (2) quality of clinical operative procedures, (3) meeting department expectations, and (4) other significant factors appropriate in determining clinical performance.

UOP: This has been discussed above.

UW: No response.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

UBC: See above notes. We have three major operative competencies, all performed in patient simulation in the clinical environment. These occur at the end of the Psychomotor Intensive (Boot Camp) program at the end of Year Two, beginning October of Year Three, and beginning early March toward the end of Year Three.

The first is for Class I preparation and restoration, using amalgam and resin restorations, in molar teeth. There is a high accountability for asepsis control, ergonomics, and tissue management at all levels, rubber dam placement and removal, and other professionalism issues. Strong self-evaluation components are monitored throughout these competency evaluations and included as an integral part of the competency itself.

The second competency is for Class II (simple), III, and V preparations and restorations for a variety of restorative materials, upon successful completion of which students are permitted to begin treating their patients for these entities during their paralleled Integrated Clinical Care sessions. Students who pass this competency early, therefore, begin operative clinical treatment sooner, right alongside students who are not yet so qualified and who, therefore, are seeing patients for periodontal care (if they have passed those relevant competencies overseen by that division) or who are continuing practice in simulation in preparation for their won competency examinations.

The third competency is for complex amalgam restoration design, preparation, and restoration. Successful completion of this competency allows students to begin treatment of complex restorations, Class IV (a module in these restorations, as well as veneers, precedes and is prerequisite to sitting this competency)

Comfortable with these methods of rating students “competent”? No. **LM** wants to increase the use of Portfolios, Case presentations and Ratings. **LR** prefers to have these simulation competencies confirmed with clinical competencies which can be overseen and evaluated by dedicated inter-rater conditioned clinical instructors. These would be planned and scheduled by the student in consultation with Group Manager, according to a specified range of operative entities to be evaluated, and would occur once during the last two months of Year Three and twice during Year Four (once during first term and once during second term). Students would be monitored and evaluated as per daily supervision of treatment, but more formally for recording purposes. Of course, any potential breach of sound treatment or protocol would occasion the same intervention per daily supervision (and the competency evaluation repeated, depending upon the situation). Issues of patient vulnerability have appeared foremost and frequently in such discussions of patient-based clinical competency evaluation at UBC.

LLU: The D2 students have to pass a comprehensive Objective Simulated Clinical Exam (OSCE) prior to being assigned patients. The discipline covered are patient relations, patient history, and oral diagnosis (with standardized patient “actors”), as well as an operative procedure on a manikin.

In the D4 year, the first Senior Comprehensive Clinical Exam is done on a manikin where the students have to do a Class II amalgam, a Class III composite restoration, prepare a 3-unit bridge and a metal-ceramic crown, and a 25-station simulated CD and RPD exam. Students not performing to a minimum competency have to remediate prior to taking the second SCCE in which the amalgam and composite restorations are performed on patients, in addition to the FPD and RPD sections which are non-patient based.

USC: There are no simulated exams currently, but under the PBL pedagogy that may change.

UCLA: The four simulated fixed prosthodontics examinations are given over the course of the fourth year, although we plan to move two of these examinations into the third year.

We find that our present method provides numerous and varied opportunities to assess competency such that we are confident in rating a given student competent/not competent at the end of as well at points along the four-year curriculum. These assessments occur periodically, under both normal clinic and special (mock board) conditions, in individual and group settings, and in both clinical and simulated situations. Competency examination requirements are communicated in detail to students at the start of the second year, giving them ample time to select cases and prepare for the exams as necessary.

UCSF: No response.

OHSU: We utilize non-patient competency exams only in the preclinical (1st and 2nd) years. We are comfortable with our present methods.

UOP: At present, two operative procedures are performed for the California Dental Board Examination. The test case/mock board program previously discussed is the students' primary preparatory route for this challenge. However, "fresh" proximal caries is becoming increasingly rare, and after doing primarily replacement restorations, students begin to conceive replacement restorations as having normal dimensions. For this reason, the senior class has two sessions back in the preclinical lab to re-establish their perception of "ideal." Generally, I am very satisfied with our present system of competency evaluation. Because the students work with quite a large number of instructors, I feel that their evaluations are accurate. In addition, each instructor is cross-evaluated for his/her competency scores. If one becomes outside the norms for grading students, he/she is notified of this.

UW: No response.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

UBC: In prosthodontics, the third and fourth year students do **NOT** cast crowns or

build-up ceramics. They send their cases to commercial laboratories. Quality is assessed and reviewed by students together with a faculty member who helps the student learn to qualify lab work. The students do trim dies, mark margins, check and modify wax patterns created by the laboratory, check metal copings, ceramics, and chair side custom staining of metal ceramic crowns. There is also a requirement for each student to go out to a dental laboratory to observe a crown for wax-up, casting, and polishing. (In other words they operate as most dentists in clinical practice.)

- LLU:** We have an in-house laboratory which supports the following breakdown:
Metal-ceramic copings (single units): 60% (40% by students)
Metal-ceramic FPD copings: 100%
Ceramic: 100%
Gold (single units): none (100% by students)
Gold FPD: 50% (50% by students)
- USC:** Students perform all lab work for cast gold restorations. Porcelain/ceramometal cases are sent out to a commercial lab. USC does not have an in-house lab.
- UCLA:** For complex cases, students are required to produce and mount diagnostic casts and perform diagnostic waxing. A commercial lab does all lab work involving fabrication of final restorations.
- UCSF:** No response.
- OHSU:** Students do all of their own lab work except PFM crowns. PFM crown cases are sent to an outside lab once models are poured and mounted and dies are trimmed.
- UOP:** Very little student lab work is done after the preclinical laboratory courses. Our model is that of private practice. However, faculty must complete a progress sheet with check-off steps before any case is sent to one of three outside dental laboratories. In addition, we have two CDT's who examine each case from the standpoint of the laboratory technician, both as the case is submitted, and again as the case is returned from the dental laboratories. All re-do's are logged with subsequent analysis to see if student, faculty, or laboratory require further examination.
Students are advised to perform their own diagnostic wax-ups for esthetic cases, however.
- UW:** No response.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or "soft start" curing (stepping, ramping, pulsing)?

- UBC:** The theoretical and practical aspects of light-activated polymerization are reviewed along with current developments related to light curing protocols and available equipment. The material is presented in a lecture format. The lecture also reviews pertinent references from the published literature along with

information available on manufacturers' web pages.

Only conventional light curing methods are currently being used in our Clinic.

- LLU:** We are still using/teaching with the conventional halogen lights with a 40 second cure per increment. Research is being conducted with the high energy systems but have not been incorporated into the pre-doctoral programs at this time.
- USC:** Only conventional quartz-halogen lights and traditional curing approaches are used.
- UCLA:** Quartz-halogen curing lights are exclusively used in the student clinic. Soft start techniques are not used.
- UCSF:** No response.
- OHSU:** Not utilizing newer approaches clinically, but they are mentioned in 3rd year lectures.
- UOP:** If one spends the time to review all of the extant literature, including AADR/IADR abstracts, supporting research for high-energy cures or stepping, ramping, pulsing, etc., is so widely varying that no good scientifically-based decision can be made in this regard. Harry Albers has reviewed this quite well in his ADEPT journal (and most probably in the upcoming 9th edition of "Tooth Colored Restorations." (BC Decker).
The pro/con arguments are presented to the students. The approach of Jack Nicholls at Washington is easy to follow and at times recommended.
- UW:** (Views on this topic provided by Dr. Tar-Chee Aw who has done research in this area.)
- 1) High-energy curing does NOT increase shrinkage. % conversion is dependent on time as well as intensity.
 - 2) High-energy curing may increase internal stress, and could lead to interfacial gaps and poorer marginal integrity. Effects of hi-energy cure on physical properties - unknown.
 - 3) Curing energy is less important than curing time in determining depth of cure. At present, even with a laser, a 10 sec cure is only good for 2mm. A halogen with 40 secs cure will do 4-5mm. 1-3 secs(as advertised) is totally inadequate - undercuring is a definite concern. Thus 2mm incremental curing needed.
 - 4) High-energy curing for 10 secs causes less overall heating of pulps than halogen at 40 secs, but surface spike of temperature is high. Try it on your fingertip.
 - 5) LED lights consume little power, cool, bulbs last longer, BUT underpowered, and likely to need longer curing time than halogen.
 - 6) Halogen costs ~\$500, Plasma-arc costs ~\$5000, Laser costs ~\$10K, 'nuff said. High-energy halogen is now available too, at ~\$1500
 - 7) If dentist does lots of composites, a high-energy light may be useful, but then again, time saved is not a contiguous block of usable time.
 - 8) Pulse/step/ramp curing? Maybe, maybe not. More research needed, but probably a gimmick with no *clinical* significance.

What evidence are you using to support the utilization (if doing so) of this curing approach vs. the conventional method?

UBC: No response.

LLU: No response.

USC: No response.

UCLA No response.

UCSF: No response.

OHSU: No response.

UOP: No response.

UW: No response.

IV. Magnifiers

**Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers? Please identify type.**

UBC: Yes.
No.

The surgical telescopes they choose must match each student's musculoskeletal declination angle, working distance and (if applicable) optical prescription. Almost all purchase 2.0X – 2.75X surgical telescopes. Most now buy GSC SurgiTel spectacles-mounted (flip-ups) because of the flexibility and customizability of these scopes, as well as the weight minimization (the ultralight is acquired almost exclusively). A few still buy Designs For Vision (although we have had increasing service and specification problems with their systems, and in most parts of the US they will not furnish customized declination Angles. A few students purchase Orascoptics through-the-lens system, but we have had many problems with their accuracy of optical delivery as well as with the inflexibility to modify the telescopes as the student's command of clinical ergonomics improves (which often implies the advisability of musculoskeletal modifications during early clinical work).

LLU: Magnifiers are highly recommended but not required. A short lecture is given during the D1 course "Freshman Clinical Topics" in which features and selection criteria are discussed. Three companies (Designs for Vision, Orascopic, and Surgitel) are invited to participate where the students have a choice in selection.

USC: No, magnification is optional. Most clinical faculty personally utilize magnification.

UCLA: Students are required to purchase operating telescopes.

- UCSF:** No response.
- OHSU:** Recommended only – not required.
- UOP:** No. However, the costs for an entry-level (Surgitel flip-down) were included for the first time with this year's freshman class so that loans could be acquired for them if necessary. Students are given a very basic presentation by the faculty, then representatives from all interested manufacturers are allowed to present their products. Faculty generally abstain from specific recommendations.
- UW:** No response.

If not used, is a certain level or quality required? Please indicate.

- UBC:** See previous response.
- LLU:** See previous response.
- USC:** n/a
- UCLA:** Students choose from one of three vendors: Designs for Vision, Orascoptic, and Surgitel. They also make individual choices regarding fixed ocular vs. flip-up, and magnification level. Most students choose 2.5x magnification, and few choose 3.5x.
- UCSF:** No response
- OHSU:** Regardless of magnification, a certain level of quality is expected.
- UOP:** No. Neither brand nor magnification is specified.
- UW:** No response.

Which year(s) and in which disciplines are they being utilized?

- UBC:** The telescopes are used for almost all clinical procedures. They are acquired at the beginning of Year One and continued throughout the students' professional careers.
- LLU:** No response.
- USC:** No response.
- UCLA:** Students are required to select and purchase telescopes in the first year. They are utilized in most of the clinical disciplines.
- UCSF:** No response.
- OHSU:** Years 1 through 4.

UOP: 86% of this year's senior class have loupes, and most of them were purchased during the first year. Operative and fixed are by far the most common disciplines where loupes are used.

UW: No response.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

	preclinical laboratories	clinic	Addtl Notes
UBC	90%	85%	No Comment
LLU	95%	95%	No Comment
USC	50%	90%	No Comment
UCLA	95%	95%	No Comment
UCSF	No Response	No Response	No Comment
OHSU	50%	90%	No Comment
UOP	75%	85%	No Comment
UW	No Response	No Response	No Comment

Please list references on benefits or problems with the use of magnification.

UBC:

Rucker, L.M., Beattie, C., McGregor, C., Sunell, S. and Ito, Y. "Declination Angle and Its Role in Selecting Surgical Telescopes", J. Am. Dent. Assoc. 130:1096-1100, 1999.

Rucker, L.M., Beattie, C., McGregor, C., Sunell, S. and Ito, Y. "Declination Angle: A Key Factor in Selection of a Surgical Telescope", Dental Abstracts 44(6):254-255, November/December, 1999.

Rucker L, McGregor C, Beattie C. Surgical magnification in clinical simulation: enhanced visual control of performance. J Dent Ed 60(2):122, 1996.

Kanca J, Jordan PG. Magnification systems in clinical dentistry. J Can Dent Assn 1995;61(10):851-856.

C.R.A. Newsletter. Magnification 1995; 19(10):3.

Burton JF, Rucker LM. The use of magnification devices in dentistry: a survey of dental practitioners. Proceedings of IADR; Singapore;1993.

Leknius C, Geissberger M. The effect of magnification on the performance of fixed prosthodontic procedures. J Calif Dent Assn 1995;23(12):66-70.

Lunn R, Sunell S. *Posture, position, and surgical telescopes in dental hygiene. J Dent Ed* 1996;60(2):122.

Coburn DG. *Vision, posture, and productivity. Practice Management* 1984;74:13-15.

Rucker LM, Richter W, Beattie C. *Fine visual acuity and the performance simulation setting. J Dent Ed* 1985;49(1):86.

Rucker L, McGregor C, Woo G, Leong YM. *Effects of low-magnification surgical telescopes on preclinical operative dental performance. J Dent Ed* 1992;56(1):34.

Rucker L, and McGregor C. *Surgical magnification in clinical simulation: enhanced visual control of performance. J Dent Ed* 1996;60(2):122.

Chang BJ. *Role of advanced surgical telescopes and illumination systems for clinical procedures In: Dental implants --- The art and science, Babbush CA, Ed, Chapter 24, 495-505, W.B.Saunders, Philadelphia, 2000.*

Rucker, L.M. and Sunell, S. "High-Risk and Low-Risk Ergonomics: Postural and Positional Profiles for Dentists", *J. Calif. Dent. Assoc.*, in press, 2001.

Rucker, L.M. and Sunell, S. "Musculoskeletal Health Status in B.C. Dentists and Dental Hygienists: Evaluating the Preventive Impact of Surgical Ergonomics Training and Surgical Magnification", *Workers' Compensation Board of British Columbia*, 258 pp., November 2000.

LLU: No response.

USC: No response.

UCLA: No response.

UCSF: No response.

OHSU: No response.

UOP: Dr. Rucker's references are excellent. Here are others (some duplication).

Belde T, Charlton D. *Synopsis of loupes used in dentistry. USAF Dental Investigative Service Project 00-36. (www.brooks.af.mil/dis) 2000; Jun:6-7.*

Leknius C, Geissberger M. *The effect of magnification on the performance of fixed prosthodontic procedures. J Calif Dent Assoc* 1995;23:66-70.

Frankenberger R, Kramer N, Pelka M, Petschelt A. *Internal adaptation and overhang formation of direct Class II resin composite restorations. Clin Oral Investig* 1999;3:208-15.

Donaldson ME, Knight GW, Guenzel PJ. *The effect of magnification on student performance in pediatric operative dentistry. J Dent Educ* 1998;62:905-10.

Forgie AH, Pine CM, Pitts NB. Restoration removal with and without the aid of magnification. J Oral Rehabil 2001;28:309-13.

UW: No response.

List other benefits or problems seen/perceived with magnification.

UBC: See chapter on Surgical Magnification:

Rucker, L.M. "Surgical Magnification: Posture Maker or Posture Breaker?", In Ergonomics and the Dental Care Worker, Murphy, D.C., Ed., Chapter 8, APHA, pp. 191-216, 1998.

LLU: No response.

USC: No response.

UCLA: Problem: Students are required to make their selection very early in the curriculum.

UCSF: No response.

OHSU: Problems: cost; narrow field of vision

UOP: It is our distinct impression that many seniors who own loupes are wearing them in such a manner that they cannot be using the magnifying lenses. In fact, I have begun a survey to investigate this. Dr. Rucker has presented the thought that as students may not be initially fitted properly for declination angle. My gut feeling is that some form of fitment was not done properly, and that the students don't realize this. It is also conceivable that they select too high a magnification (bigger is better theory) and can't see enough of the mouth/face to be comfortable. Although the survey was completely anonymous, most students express a high level of satisfaction with their loupes. Again, a gut feeling: the students who do not wear their loupes as regularly almost always have fixed lenses, either Orascoptic or Designs for Vision. The students who have Zeiss loupes *always* wear theirs.

UW: No response.

V. Regional CODE Agenda
(please report on them)

Traditional vs. Problem Based Learning (PBL) approaches were discussed at length (see summary page).

Operative faculty at all Region I institutions were urged to join the Academy of Operative Dentistry (short presentation on AOD by Dr. Haisch).

It was agreed that the new dental school at University of Nevada, Las Vegas be contacted and invited to join CODE.

VI. National CODE Meeting

A National CODE meeting will be held Thursday, February 21, 2002 4:15-6:00PM at the Fairmont Hotel in Chicago, Illinois. This is in conjunction with the annual meeting of the Academy of Operative Dentistry. Please submit 1-2 items for consideration for the 'agenda' of the National Meeting. Suggestions as to how to make this brief meeting productive and efficient are needed.

Consider assembling a consensus panel, charged with reviewing the regional reports and cited evidence and producing evidence-based recommendations for teaching operative dentistry.

VII. Suggestions for CODE.

What can the organization do to improve its effectiveness?

The annual report document published by CODE is a valuable resource for operative dentistry educators. Inasmuch, however, as it is a compilation of regional reports, which are each compilations of individual school responses, it somewhat unwieldy. It could be improved with a summary piece at the beginning that would provide a reader with a sense of general trends among various institutions. A shorter (two pages?) but similarly structured document along the lines of the J Prost Dent Annual Review of the Literature could effectively communicate these. It is also more likely to be read in its entirety by faculty as compared to the full report, and could be useful in various negotiations between operative faculty and administrators or curriculum committees. A small editorial board comprised of the National Director and his/her designees could be established and charged with drafting such a summary.

CODE Region I (Pacific) Attendees Form

NAME	UNIVERSITY	PHONE #	FAX #	E-MAIL ADDRESS
Joe Brockman	USC	919-376-1439		MJBrockman@aol.com
Suzanne Coulter	USC	213-740-2216	213-740-6778	scoulter@hsc.usc.edu
Larry Haisch	UNMC	402-472-1290	402-472-5290	lhaisch@unmc.edu
Edmond Hewlett	UCLA	310-825-7097	310-825-2536	eddyh@lent.ucla.edu
Lynette Kagihara	USC	213-740-0363	213-740-6778	kagihara@hsc.usc.edu
Calvin Lau	USC	213-740-1525	213-481-0998	cslau@hsc.usc.edu
Ralph Leung	USC	213-740-1530	213-740-6778	rleung@hsc.usc.edu
Michael Mulvehill	USC	213-740-1526	213-740-6778	mulvehil@hsc.usc.edu
Patrick Oshita	LLU	909-558-4640	909-558-0253	povc720@yahoo.com
Lance Rucker	University of BC	604-882-4158	604-433-0111	lrucker@interchange.ubc.ca
Patricia Ryan	USC	213-740-9364	213-740-6778	parya@hsc.usc.edu
Daniel Tan	LLU	909-558-4640	909-558-0253	datan@sd.llu.edu
Ron Winder	Western Regional Exam Board	918-664-1666		PEDSDDS1@aol.com

CODE REGIONAL MEETING REPORT FORM

REGION: II (Midwest)

LOCATION AND DATE OF MEETING:

University of Nebraska Medical Center College of Dentistry Lincoln, NE

September 23-25, 2001

CHAIRPERSON:

Name: Dr. William Brackett

Phone #: (402) 472-9846

Address: UNMC College of Dentistry

Fax #: (402) 472-5290

40th & Holdrege Streets

E-mail : wbrackett@unmc.edu

Lincoln, NE 68583-0750

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: Dr. Craig Passon

Phone #: (303) 315-6370

Address: University of Colorado

Fax #: (303) 315-0346

4200 E Ninth Avenue

E-mail : Craig.passon@uchsc.edu

Denver, CO 80262

Date: September 23-24, 2002

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC
College of Dentistry;

40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290 Fax: 402 472-5290 E-mail: lhaisch@unmc.edu

Also send the information on a disk and via e-mail with all attachments.

Please indicate the software program and version utilized for your reports.

SUMMARY OF RESPONSES TO NATIONAL AGENDA: Region II

I. Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based? (Eligibility for graduation is linked to competency.) Can there be or is there a combination of both - requirements and comprehensive care?

With one exception, all of the attending schools blend competency examinations with numerical requirements or expectations.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

For all of the attending schools except Minnesota and Nebraska, students have a home cubicle or area, sometimes during block rotations.

What is your method for determining and maintaining competency?

All of the attending schools administer periodic competency examinations, and utilize daily clinical treatment of patients to maintain competency.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

All attending schools utilize patient-based competency examinations in operative dentistry.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

Responses ranged from students doing all single-unit gold castings at Minnesota, to no laboratory work in operative dentistry at Iowa. The other attending schools generally require students to prepare dies and mount casts for use by a laboratory technician.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or "soft start" curing (stepping, ramping, pulsing)? What evidence are you using to support the utilization (if doing so) of this curing approach vs the conventional method?

All attending schools use ordinary halogen curing lights in operative dentistry clinics, with most providing only didactic instruction about other curing methods.

IV. Magnifiers

Does your school require students to have magnification?

If so, are they required to have the same specific magnifiers? Please identify type. If not used, is a certain level or quality required? Please indicate. Which year(s) and in which disciplines are they being utilized?

One attending school, Colorado, requires purchase of magnifiers by first-year students. All attending schools favor use of magnification, especially for students unable to see adequately without it, but none have any set criteria for recommending them.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories 25-95 % and the clinic 30-95 %?

Please list references on benefits or problems with the use of magnification.

Only one research article was cited, that showed no difference in student performance in pediatric dentistry, either with or without magnification.

List other benefits or problems seen/perceived with magnification.

Most attending schools had no adverse experience with magnification. One school cited poor fitting of students by manufacturers, which reduces the effectiveness of the magnifiers.

Suggestions:

Region II - Review/discuss the CRDTS exam annually. Annual host school should coordinate with CRDTS Exam Review Committee to have at least their agenda available for discussion at each annual Region II CODE meeting. (Contact for ERC - Craig Passon, Colorado)

National - Proposed question for national CODE meeting in February: That although the responses to the national agenda by all regions are annually published, each regional meeting, by majority vote, may direct the meeting host or regional director to inform a certain group of the consensus about or response to designated agenda items. (e.g. the consensus of the regional meeting concerning an agenda item about student contact is that faculty feel their percentage of student contact is too low. Attendees at a regional meeting could vote to have the regional director inform dental deans and department chairmen in the region of this.)

Reason for this proposal: CODE is a relatively introspective organization, and regions should have the option of being more proactive concerning sharing of information about issues of importance with those outside of CODE.

Proposed agenda items for next year's regional meetings:

1. Should indirect restorations be taught in operative, fixed pros., or both?
2. How do you remediate failed competency exams?
3. Should time/speed be a factor in completion of competency exams?
4. How do you calibrate faculty for and grade competency exams?

5. Should comprehensive care dental school clinics be supervised by general dentists, or by individuals with advanced training?
6. How much curriculum time is given operative dentistry in your school, and how is your curriculum sequenced?
7. How do you review and revise your operative dentistry curriculum?
8. What makes an effective teacher?
9. What percentage of operative faculty time at your school is committed to student contact and scholarly activity?
10. How are your clinics scheduled, for both students and faculty?
11. Does your school have a faculty practice, how much time may you devote to practice, and are there restrictions on where you can practice? Must your faculty devote a certain percentage of time to practice, or reach a certain production level?

**2001 NATIONAL CODE AGENDA
REGION II RESPONSES**
(Please cite the evidence were applicable)

I. **Requirements vs. Comprehensive Care**

**How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)**

COLO: Students must be declared competent in all 31 UCSD competencies before they are allowed to graduate. There are no numerical requirements for graduation. Students treat the needs of the patients and consequently challenge enough procedures during the clinic courses to permit a determination of competence. Operative dentistry does not have any numerical requirements not do we list specific procedures which must be performed. For example, we do not specify how many class III composite restorations or class II amalgam restorations that must be performed. For more information see the information which follows.

UCSD COMPREHENSIVE CARE PROGRAM DESCRIPTION

In the fall of 1996, the University of Colorado inaugurated a Comprehensive Care Program spanning six semesters as the primary intramural clinical curriculum for all pre-doctoral dental students. Students enter the program at the start of their DS-2 spring semester, after having observed and assisted upperclassmen treating patients in the clinic in the previous year. During this first semester (termed the "Transition Clinic") students treat patients in the Comprehensive Care Clinic 3-5 sessions per week, performing primarily oral diagnosis, periodontal, and operative dental procedures. By the beginning of the following semester, students have accumulated a "family" of assigned patients, and they are responsible for the total dental care of these patients. From the DS-2 summer semester through the DS-4 fall semester, students treat patients in the Comprehensive Care Clinic 7-10 sessions per week, with intermittent rotations through the Oral Surgery, Emergency, and Pediatric Clinics. All non-emergency dental treatment (other than oral surgery) for adult patients is performed in the Comprehensive Care Clinic.

Following completion of the Comprehensive Care Program, students spend their final semester of dental school in the A.C.T.S. (Advanced Clinical Training and Service) Program, providing direct dental services to underserved communities in Colorado. The A.C.T.S. Program is the cooperative effort between the School of Dentistry and community-based providers, to provide dental care to underserved Colorado residents.

The full-time Comprehensive Care Program faculty includes seven dentists. Some have completed advanced specialty training programs; however, all serve as generalists in the Comprehensive Care Clinic. These faculties cover most routine dental procedures in the clinic, and, as Comprehensive Care Group Leaders, they also work closely with the individual students in the treatment planning and case management of their assigned patients. A few part-time faculty are appointed in the Comprehensive Care Program, but over 95% of the Comprehensive Care Clinic faculty coverage is provided by the full-time faculty.

Faculty from the Divisions of Endodontics, Fixed Prosthodontics, Operative Dentistry, Oral Diagnosis, Orthodontics, Periodontics, and Removable Prosthodontics are also assigned to

the clinic, to cover selected specialty procedures and to provide specialty consultation. During the first two years of operation of this program, students were required to complete specified numbers of various procedures in the course of delivering complete care to their pool of assigned patients. As the dental students of the Class of 2000 entered the Comprehensive Care Clinic in the spring of their second year (spring of 1998), a different, competency-based, set of clinical expectations was communicated to them. These students were presented a list of "Recommended Core Experiences" and told that their Comprehensive Care Group Leaders would work with them to assure that their assigned patient pool provided these experiences. The "Recommended Core Experiences" were stated as quantitative guidelines, as summarized in Table 1. It was emphasized to students that these were recommendations, and not absolute requirements or quotas. The "requirements" for completion of the Comprehensive Care Program were summarized as:

Successful performance on all departmental competency examinations, and
Timely completion of the comprehensive dental treatment appropriate to each assigned patient.

Using the list of "Recommended Core Experiences" as a guide, the Comprehensive Care faculty assumed the responsibility of distributing patients in such a way as to meet the individual experiential needs of each student. In order to monitor the case management of patients, and to assure that each student's patient pool provided a thorough mix of clinical experiences, it was essential that the Comprehensive Care Group Leaders have instantaneous access to up-to-date clinical activity information. Reports based on the CU School of Dentistry's Clinic Computer System database are available on demand in real-time to Comprehensive Care Group Leaders, Clinic Coordinators, and students on the School of Dentistry's intranet. The reports contain detailed information about each student's patient pool, including treatment plan, timeliness of treatment and other case management data, an inventory of all clinical procedures planned, initiated, and finished in the patient pool, and daily clinical evaluations data for each visit. These reports are utilized by the faculty to make decisions in the assignment of new patients to students in the Comprehensive Care Program. Faculty from each specialty division specified a list of the clinical procedures for which they wished to have student activity reports. The reports incorporate itemized summaries of each student's clinical activities in the specified procedures, as well as detailed daily clinical evaluation data (student self-evaluation and faculty evaluation) for the clinic sessions in which those procedures were performed. These customized clinical activity reports are also available on demand in real-time to specialty division faculty on the School of Dentistry's intranet.

CRE: Creighton University School of Dentistry has a two-fold approach to the requirement vs. comprehensive care issue. Students are assigned clinical patients at the beginning of their Junior year. They will treat these patients until all work is completed and they have performed one recall visit. At this recall visit, in addition to the exam and prophylaxis, the previously completed work is evaluated. If there are no problems then the patient is put into the clinic's recall block.

Juniors and seniors both have minimal core experiences that they are expected to meet, with those minimal experiences defined per department. The operative area allows flexibility in options for inlays/onlays, amalgams and posterior composites. Students are also expected to follow patients through to completion of their treatment. These completion cases are categorized into simple cases, which involve two departments and complex cases, which involve three or more departments. There are minimal numbers of both simple and complex cases which the students are expected to complete.

Students are assigned faculty members to regularly meet with concerning their patients and the treatment of such patients.

- IOWA:** Junior clerkship utilizes competency exams combined with requirements. Family dentistry uses a similar system combined with comprehensive care.
- MANT:** Up until the second year, students receive a traditional requirement based program. Third year dentistry has no requirements, final grades are based on the results of competency exams. Fourth year has no requirements and no daily grading until Christmas. After Christmas, competence based evaluation commences. Students, however, have to meet quantitative expectations which encompass a broad spectrum of clinical modalities (comprehensive care).
- MARQ:** No Comment
- MINN:** Each clinical discipline has a set of competencies which students must pass. In addition there is a productivity competency. This is intended to assure not only clinical attendance, but also effective use of clinic time. Most disciplines have minimum numbers of clinical experiences (i.e. requirements). Operative Dentistry requires completion of 133 clinic sessions over a two-year period. There are three competencies: Class III composite resin, Class II amalgam, and posterior partial veneer cast gold. In order to be eligible for these competencies, the student must successfully complete 8 Class III composite resins, 8 Class II amalgams, and 8 cast gold restorations.
- UNMC:** UNMC College of Dentistry has minimal requirements in operative dentistry (and fixed prosthodontics), mostly as prerequisites for competency exams.
- SASKAT:** No Comment
- SIU:** There are no numeric requirements for any procedures- only competencies and a set number of comprehensive care points are required for graduation in every discipline. These points help ensure adequate breadth of experience in every field.
- UMKC:** We have evoked competency exams which is really a nomenclature change. Done on typodonts. Class III, Class II amalgam, Class II Composite (on patients).

Can there be or is there a combination of both - requirements and comprehensive care?

- COLO:** Yes, we have a hybrid system. However, the requirement component is very small. About 95% of the system is a no requirement system. See program description above for more details.
- CRE:** Yes.
- IOWA:** There can be a combination as long as both are clearly defined.
- MANT:** In third year dentistry our concern has been the exposure of students to the various aspects of restorative dentistry, but fourth year emphasizes comprehensive care and to that end, our students chose three multidisciplinary

cases from their family of patients and work them through to completion. They are graded pass/fail on these patients, and satisfactory completion of these impacts 20% of the student's final grade.

MARQ: No Comment

MINN: Yes, requirements and comprehensive care can co-exist.

UNMC: The patient care model at UNMC College of Dentistry is comprehensive care, with a single student responsible for providing or arranging all of a patient's care. All requirements and competency exams must be arranged secondary to this priority.

SASKAT: No Comment

SIU: It is very difficult to have a combination of both- requirements and comprehensive care.

UMKC: We have a combination although in operative we could easily call our requirements competencies:
- clinical Mock Board (on a patient which they must pass)
- competencies as listed above.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

COLO: Students work in practice groups. Each group has a bay of chairs to which they are assigned. Students are assigned chairs on an appointment basis. There is equitable distribution. The students do not have a "home" chair. They are assigned randomly at each clinic session. Some disciplines use a block rotation (such as oral surgery) in which the students have assigned chairs. Within the comprehensive care program there are no discipline specific chair assignments. However, there are specialty coverage available each session (such as endodontics) in which students may treat patients with more complicated procedures.

CRE: The students are assigned to one of four teams in the clinic. Each team has clerks assigned and located adjacent to the team clinic area. The clerks assume scheduling needs of the students and chair assignments on a daily basis. General Dentistry instructors are assigned different teams on differing days but consistent throughout the semester. Students perform oral diagnosis, prophylaxis and operative dentistry in these teams. Seniors are allowed to complete defined crown and bridge procedures in their team area. Juniors must complete all fixed procedures in the fixed department.

Endodontics, periodontics, and prosthetic procedures are completed in areas designated as such, under the supervision and instruction of such staff. Students are assigned to block rotation in oral surgery, pedodontics and recall/oral diagnosis.

- IOWA:** Junior students are assigned to a block rotation with assigned cubicles. Senior students have assigned cubicles.
- MANT:** Yes, our students have their own assigned cubicle which would only change when students are out of the clinic due to external rotations
- MARQ:** No Comment
- MINN:** Students do not have their own assigned cubicle. Students are blocked into oral surgery, pediatric dentistry, oral diagnosis and admissions, and hospital dentistry. Junior students treat their patients in discipline-specific clinics: operative, prosthodontics, periodontics, and endodontics. Senior students treat their patients in the comprehensive care clinic which is composed of 64 cubicles divided into four groups with a faculty group director. This clinic includes operative, prosthodontics, periodontics, senior dental hygiene, and treatment planning.
- UNMC:** UNMC College of Dentistry has discipline-specific clinics, although due to proximity, students frequently treat patients in multiple disciplines during the same appointment.
- SASKAT:** No Comment
- SIU:** Students go to a discipline specific clinic based on patient needs.
- UMKC:** No discipline department areas specific in Restorative Assigned cubicles 1/3 of students have assigned cabinets.
Rotations:
- | | | |
|----------------------|--------------|------------------|
| Emergency | Ortho | Outreach Program |
| Endo (molar) | Pedo | |
| Special Patient Care | Oral Surgery | |

**What is your method for determining and maintaining competency?
Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.**

COLO: *This is the document published in our student education manual regarding determining competence in operative dentistry.*

CLINICAL OPERATIVE DENTISTRY
STUDENT EVALUATION OF COMPETENCE

GENERAL INFORMATION

Clinical Operative Dentistry consists of the following courses:

- DSOP: 6655 CLINICAL OPERATIVE DENTISTRY
- DSOP: 7755 CLINICAL OPERATIVE DENTISTRY
- DSOP: 8855 CLINICAL OPERATIVE DENTISTRY

Each course corresponds to advancement in the dental curriculum by year.

Grades

The grades given in Operative Dentistry are determined by a formula. Fifty percent of the final grade will be based on the clinical competency examinations for that semester; 20% of the grade will be based on the daily clinical dentistry activity evaluations; 20% of the grade will be based on the clinical operative dentistry productivity during each semester (see table which follows); the final 10% of the grade will be based on subjective evaluation input from the comprehensive care faculty.

In order to be prepared to challenge the operative dentistry clinical competency examinations and to be competent and comfortable in operative dental practice, students must complete a reasonable number of operative dentistry activities similar to the operative dentistry competency examination they choose to challenge. There will be no specific listing of clinical requirements; a listing of operative activities to complete will not be made. However, a list of accepted activities is available for review.

The Department of Operative Dentistry observes all of the general clinical policies as written in the Clinical Manual distributed by the Office of Clinical Affairs. This covers the areas of dress code, clinic utilization, asepsis and sterilization, honesty, patient management, patient abandonment, etc.

The student is required to utilize the techniques, materials and instrumentation taught in the pre clinical operative dentistry courses at all times. Faculty may wish to expose students to new materials and techniques; if done this must be under the direct supervision of the faculty member. It is essential the student have all necessary instruments available and in good condition while treating patients in the clinic. The student is also expected to plan ahead for each days procedure and have the necessary supplies available to complete the procedure (e.g. pins, bases & liners, etc.).

Evaluation Criteria

Daily clinical activity is evaluated on the "Visit Ticket". The criteria used are those established by the Comprehensive Care Program with modification by the Division of Operative Dentistry. The Operative Dentistry Clinical Competency Examinations use the criteria as established and used in the pre clinical courses.

Credits

A total of 5.0 credit hours are allowed for Clinical Operative Dentistry. These credits are distributed among each semester of the three courses based on a percent of the time expended. Credit is awarded upon successful completion of the course expectations during that semester.

CLINICAL OPERATIVE DENTISTRY CLINICAL ACTIVITIES AND EXPERIENCES

The operative dentistry clinical activities are designed to provide the student with a reasonable opportunity to learn the various methods of operative dentistry treatment of the dental patient and to develop competence in this subject. The activity numbers and distribution are established to help a student become competent in operative dentistry but, by themselves do not determine a competent end point. The division of operative dentistry reserves the right to change the amount and kinds of activities an individual student may need to perform in order to achieve clinical competency in operative dentistry. There is no serial listing of the kinds of operative dentistry activities a student must experience. However, a list of accepted operative activities is available for review. This list is not exclusive.

It is advised that students seek a wide range of experiences in operative dentistry by performing multiple and varying activities. It is believed that the comprehensive care environment will provide that distribution. Students should treat their patients appropriately. Activities will be any service rendered to single teeth to prevent disease and its sequelae, and preserve or restore their health, form, and function, this service does not necessarily require cutting of the hard tissue. The distribution and quantity of activities, the quality of performance during the clinical operative session, subjective evaluation by comprehensive group leaders, and results of the Operative Dentistry Clinical Competency Examinations will be used to determine a student's competency in this discipline. The student should spend a reasonable amount of their clinic time performing operative dentistry activities. Of the total clinic hours allocated to operative dentistry a certain percent should be used each semester until all the hours have been used. This statement does not imply that the student is not able to use more or less clinic hours in operative dentistry to achieve competence.

The table below is only a guideline of expenditure of clinic hours in operative dentistry.

SUGGESTED EXPENDITURE OF OPERATIVE DENTISTRY CLINICAL HOURS*

DS 2 Summer	15%
DS 3 Fall	35%
DS 3 Spring	60%
DS 3 Summer	75%
DS 4 Fall	100%

*By the end of the semester listed the student should have completed the indicated percent of operative dentistry clinical hours.

**OPERATIVE DENTISTRY CLINICAL COMPETENCY EXAMINATIONS
CLASS OF 2002**

The Policy

The determination of clinical competency in operative dentistry is made, in part, by student's participation in clinical competency examinations. Eight clinical competency examinations will be spaced at regular intervals throughout the students assigned clinical operative dentistry program. Each student will be responsible for completion of the listed competency examination(s) during each semester in which they are required (see Table 1). Students will also be expected to treat all of the operative dentistry needs of their assigned patients in a timely basis.

A student should not attempt an examination or a particular procedure from the Skill Level list until he/she believes they are ready to demonstrate that they are in fact competent in that particular procedure. The student should consult with their Group Leader to help assess their readiness to participate in these examinations. Please note that delay in taking any of these exams could delay the students' completion of the clinical Operative Dentistry curriculum. Examinations not attempted during the required semester carry forward to the last semester. There are no make-up or catch-up provisions until the last semester. And, then with the concurrence of the chair of the division of operative dentistry.

Students are required to actively participate in 8 competency exams distributed throughout the clinical program as indicated in the Table 2 below. You must participate in all eight examinations. The skill level determines the allowable procedures (refer to Table 2) which may be performed for the examinations during each semester.

Table 1		
Semester	Exams Required	Skilll Level
DS 3 - Fall	2 + 1 *	1
DS 3 - Spring	2	2
DS 3 - Summer	1	3
DS 4 - Fall	2	3

*Includes two surgical caries management activities and one yearlong non-surgical caries management activity. See details below.

Students may choose procedures from the list in table 2 relative to their current clinic activities and skill level and subject to the conditions listed in table 3. The skill levels were established to prevent a student from challenging an especially complex restoration with too little clinical

experience.

Table 2

Skill Level	Procedure Choices*
1	Class I Amalgam (simple pits excluded; carious lesion required) Class II Amalgam Class V Amalgam Class I Composite (simple pits excluded; carious lesion required) Class III Composite Class V Composite Non-surgical caries management
2	Class I Amalgam (simple pits excluded; carious lesion required) Class II Amalgam Class V Amalgam PAR (not PABU) Class I Composite (simple pits excluded; carious lesion required) Class II Composite Class III Composite Class IV Composite Class V Composite Class V Glass Ionomer (must be virgin carious lesion)
3	Class II Amalgam Class V Amalgam Complex restoration utilizing pins Class II Composite Class III Composite Class IV Composite Class V Composite Class V Glass Ionomer (must be virgin carious lesion) Class II gold inlay Gold onlay

*Unless stated otherwise (Table 3) procedures may replace existing defective restorations, which need replacement.

Students must participate in no less than eight (8) competency examinations and the following required procedures must be performed to receive a grade in Clinical Operative Dentistry Courses.

Table 3

Procedure	Number Required	Special Conditions
Non-surgical caries management	1	Full documentation and year-end long effort
Class I Amalgam or Composite	1	Simple pits excluded. Must be a carious lesion. For composite, PRRs and sealants alone are not acceptable
Class II Amalgam	2	One of which must have a new (unrestored) proximal carious lesion.
Class III Composite	2	None

The required class I and one class II and one class III restorations must be completed by the end of the Spring semester of the DS-3 year. Also, by the end of the Spring semester, DS 3 year, students must pass 2 of the 3 **required** exam procedures and must pass a minimum of 3 of the first 4 exams (75%) in order to pass Clinical Operative Dentistry DSOP 6655, 7755 and, 7757 regardless of other competency evaluations. Failure to pass these examination will result in a recommendation to the Student Performance Committee(SPC) that the student receive special enhancement sessions and/or repeat Clinical Operative Dentistry course(s).

During the Fall semester of the DS3 year a student is required to start a non-surgical caries management program on at least one patient. This program will include the assessment of risk, a plan of treatment, execution of treatment, and evidence of successful effort at controlling, preventing and reversing/remineralizing dental caries. This effort can take up to one year. Full documentation of the program must be supplied at the completion of the examination. Details of the examination will be distributed to students at the beginning of the Fall DS 3 semester.

The other required exam procedures must be completed by the end of the Fall semester of the DS-4 year. Students must pass 3 of the 5 **required** exam procedures (including at least one Class II Amalgam and one Class III Composite) and must pass a minimum of 6 of the 8 exams (75%) in order to pass Clinical Operative Dentistry DSOP 8855 and 8857 regardless of other competency evaluations. Failure to pass these examination will result in a recommendation to the Student Performance Committee that the student receive special enhancement sessions and/or repeat Clinical Operative Dentistry course(s). In either case, competency exams may not "carry forward" and may have to be repeated or exams may have to be added to the total in order to determine competency.

Examinations can only be failed through errors which are committed during the examination. An examination will not be recorded as a failure because of non participation. Any examination not completed during a semester in which it was required will be recorded as incomplete and the requirement will carry forward to the last semester. A grade of incomplete will be reported for that semester. The exams taken in the next semester will be applied to previously missed exams to fulfill those requirements. **There will be no make-up sessions for any missed or excessive failed examinations without special permission. You cannot take more than the required number of exams for that semester.** How missed exams are made up will be considered individually during the Fall Semester DS-4 year. All exams must be taken to fulfill operative dentistry requirements.

All exams will be performed at designated examination times during the semester. Specific dates and times of examinations and detailed instructions will be distributed at the start of each semester. Faculty members will be assigned to the clinic during each session to serve as evaluators.

CRE: Junior Competency Exam – In addition to completing minimal core experiences this is necessary to advance to senior clinic. It is administered in January of the junior year. Students not passing the competency exam must repeat or receive remediation based on circumstances surrounding failure.
Senior Competency Exam – This is administered in December and January of the senior year in the form of a mock board. Again remediation or repeat is administered based on circumstances of failure.

IOWA: Predetermined criteria with exams and daily feedback booklets are used.

Failure in daily performance results in course director talking to students.

MANT: Due to a multitude of both full and part time instructors, we feel daily grading both summative and formative gives us a reasonable determination of student competency since instructor coverage is assigned randomly. Maintenance of competency we feel is best determined toward culmination of the final year. Another 20% of the final grade is devoted to a final analysis by ALL instructors - all inputs given equal value.

MARQ: No Comment

MINN: Competency in operative dentistry is determined by successively completing 133 clinic sessions and three exams as described above. These are usually not completed until the end of the senior year so maintaining competency is not addressed.

UNMC: At UNMC College of Dentistry, competency in operative dentistry is determined through clinical competency examinations which emulate the CRDTS board exam. Competency is maintained through continuous treatment of patients in the operative clinic, under the patient-centered comprehensive care treatment model. The operative faculty is also largely responsible for administering the clinical competency examination for D3's in fixed prosthodontics, which is a single-unit cast restoration done independent of faculty input.

SASKAT: No Comment

SIU: Competency is determined through specific competency exams given in junior and senior years. However, there is really no formal method of maintaining competency; except for the requirement of a set number of comprehensive care points which may not always ensure maintenance of competency in all areas.

UMKC: Using a modified "CRDTS" exam for by 2 evaluators. Exit exams.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

COLO: Yes, some disciplines have not patient-based competency examinations. However, Operative Dentistry does not. We are happy with the current system but do see some "fine tuning" that will be needed. For example, the examinations need to evaluate better a student's selection and use of restorative materials. Another example for improvement is that students should be evaluated on the process a little more rigorously. Currently, the product is what is heavily evaluated.

CRE: Yes we are comfortable with present methods in rating a student competent. If we were not then we would change them. Endodontics, fixed prosthetics and removable prosthetics have non-patient competency exams, both written and typodont based examination completed during the senior competency exam.

- IOWA:** There are no non-patient practical examinations. We are reasonably comfortable with the current system.
- MANT:** No
- MARQ:** No Comment
- MINN:** We don't have non-patient competency exams. I am not comfortable with the present methods of determining competency because there are only three exams, they are self-selected cases, and they only test a very limited portion of what comprises operative dentistry.
- UNMC:** At UNMC College of Dentistry, D2 students must pass the preparation phase of a dentoform examination which emulates the CRDTS board examination (amalgam and resin) to be eligible for operative dentistry clinics. All competency examinations of upperclassmen are patient-based, except that D4's complete a dentoform-based competency examination in fixed prosthodontics which emulates the CRDTS board examination.
- SASKAT:** No Comment
- SIU:** We do not currently have any non-patient based competencies. Therefore, I am comfortable in utilizing the present method/s in rating students competent. The issue of maintaining competency is the area in which we could do better, though.
- UMKC:**
- | | | | |
|----------------------|-------------|----------|-----------------|
| 3 rd Year | Fall/Winter | Typodont | Class II Preps |
| 4 th Year | Summer/Fall | Typodont | Class III Preps |

II. **Laboratory Support for Indirect Single Unit Restorative Treatment by Students.**

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

- COLO:** Students perform lab work in the pre clinic courses. However, some procedures they never perform. For example, processing dentures, casting RPD frameworks, and firing porcelain are not done. They do not perform lab work in the clinic courses except for that which a dentist might logically perform. For example, pouring stone in an impression; trimming a crown die and marking margins; mounting a cast with a face bow; etc. They do not cast crowns, set denture teeth, process acrylic, etc. once they begin clinic treatment. All lab work is performed by our staff technicians or is sent to outside labs.
- CRE:** For inlays/onlays students must perform all lab work on the case. For crowns/bridges students must pour, mount and trim cases before turning cases over to in-house lab. For all procedures students must have instructor sign off on designated steps.
- IOWA:** Our students just take impressions and send them to the laboratory without pouring them up with the exception of one indirect resin restoration which they prepare on the dentiform, construct in the laboratory, and then cement on the dentiform.

- MANT:** All lab work relative to restorative treatment is completed by third year students, except for processing of full and partial removable treatment. These third year laboratory procedures are however numerically low. We feel that our students should be able to experience these procedures to be able to constructively critique lab work after graduation. In fourth year, all restorative work is in-house lab supported.
- MARQ:** No Comment
- MINN:** Students do all of their own single unit cast gold lab work. A laboratory technician is available for assistance. Empress restorations are done in-house by a certified lab tech. All other lab work is done commercially.
- UNMC:** For single-unit indirect restorations placed in the operative dentistry clinic at UNMC College of Dentistry, students perform all die and model work, mounting of casts on the appropriate articulator, and writing the laboratory prescription. They may perform the lab work for any indirect restoration, with faculty supervision, if they choose. This is most common for composite resin and cast gold restorations, and uncommon for metal-ceramic restorations.
- SASKAT:** No Comment
- SIU:** Operative Dentistry in our school does not cover single crowns. The only indirect restorations done in Operative Dentistry are Composite resin inlays, onlays and occasionally gold inlays and onlays. We have the option for the students to do their own lab work since we have an in-house Belleglass oven as a grant from Kerr. However, students are able to send all their work out if they so desire. I understand such is not the case in fixed Prosthodontics where a certain number of units need to be fabricated by the student. We have No in-house laboratory support.
- UMKC:** Only model work - no casting

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or “soft start” curing (stepping, ramping, pulsing)?

- COLO:** No, we use standard curing light systems. We do not believe that the current evidence warrants a change.
- CRE:** Not being taught. Conventional curing lights being taught and utilized.
- IOWA:** Students are given up to date information regarding clinical light curing approaches and relevant laboratory information.
- MANT:** Our operative lectures touch on the newer approaches to restorative material curing but since our clinic is totally equipped with conventional light curing guns, our emphasis is still on these units.

- MARQ:** No Comment
- MINN:** We still teach and use the conventional light curing techniques.
- UNMC:** Students receive didactic instruction on newer curing methods, including LED, laser, plasma arc and fast halogen lamps with ramped curing. None of these has been incorporated into clinics at UNMC College of Dentistry.
- SASKAT:** No Comment
- SIU:** I have tested the new curing lights- some plasma arc, fast halogen and ramped intensity lights. However, we only have 2 new fast halogen lights in the clinic. The junior students are given a lecture on the new curing light approaches. Therein the available literature on these is discussed.
- UMKC:** High energy curing lights are not used. Mark Latta's research on curing lights showed incomplete polymerization.

What evidence are you using to support the utilization (if doing so) of this curing approach vs the conventional method?

- COLO:** We use the conventional method of light curing based on the evidence. We are evaluating the evidence on the newer light curing techniques.
- CRE:** No Comment
- IOWA:** We are using traditional curing times with tungsten halogen lights insuring adequate light output since we still feel this is the best method of polymerization.
- MANT:** N/A
- MARQ:** No Comment
- MINN:** No Comment
- UNMC:** No Comment
- SASKAT:** No Comment
- SIU:** At present we are using our own studies' data to support using the 2 fast halogen lights in our clinic.
- UMKC:** Not doing it.

IV. Magnifiers

**Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers? Please identify type.**

- COLO:** All students (including hygiene) are required to purchase and use magnification.

We have a magnification selection and fitting day at the school. Vendors from the major manufacturers are invited to give a presentation and then the students are allowed to be evaluated, select, and get fitted for the brand they select that day. We do not specify any specific brand but we do protect the welfare of the students by pre-screening the vendors and evaluating their products.

CRE: No.

IOWA: Our school does not require magnification. A large percentage of the students have purchased magnifiers. There is no single brand of magnifier used.

MANT: Our school encourages magnification in oroscopic designs for vision, Surgitel, etc. in our teaching. However, magnification is not required. We find it is unusual for students in their first full clinical year (third year) **not** to have purchased magnification.

MARQ: No Comment

Magnification is not required. Optivision 2.5X loupes are issued during preclinic and an increasing percentage are using them in preclinic and clinic each year. Many students purchase more expensive loupes such as Designs for Vision during special promotions offered at the state dental association meeting.

UNMC: No

SASKAT: No Comment

SIU: No, at present, students are not required to have magnifiers. However, most students purchase magnifiers in their freshman year. Orasoptic and Designs for Vision are the two most used brand names. Magnifications of 2.5 and even 3.0 seem to be most favored by students.

UMKC: Not required. Used: Designs for Viion
Merident (ultralight)
Surgitel

If not used, is a certain level or quality required? Please indicate.

COLO: N/A

CRE: Of course.

IOWA: We make recommendations of high quality magnifiers but no specific magnification is specified.

MANT: Definitely!

MARQ: No Comment

- MINN:** No Comment
- UNMC:** Students choose the type of magnification they use, if any, usually after receiving advice from faculty. These range from 1.5x loupes sold at dental stores to custom-fitted telescopes. Students observed working at inappropriately close distances during D2 preclinical operative dentistry are advised to seek eye care, and purchase magnification if necessary to work at an appropriate distance.
- SASKAT:** No Comment
- SIU:** No Comment
- UMKC:** Criteria are set to which the student must achieve an acceptable level.

Which year(s) and in which disciplines are they being utilized?

- COLO:** Students select and purchase magnification the first semester of the first year. They use magnification in all pre clinic and clinic courses. Magnification is required in all classes.
- CRE:** No comment
- IOWA:** Magnification is utilized at all levels and in all years of school.
- MANT:** All disciplines in which they are considered useful by the student.
- MARQ:** No Comment
- MINN:** They are issued in the first year and are used in operative and fixed prosthodontics.
- UNMC:** Students generally purchase magnification in the D2 year, if they purchase any.
- SASKAT:** No Comment
- SIU:** No Comment
- UMKC:** 1st - Morphology/Occlusion
Used to evaluate only in lab, not recommended for use when prepping.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

	preclinical labs	clinic	Addtl notes
COLO:	95%	95%	No Comment
CRE:	60%	60%	No Comment
IOWA:	80%	80%	No Comment
MANT:	50-75%	50-75%	No Comment
MARQ:	No Comment	No Comment	No Comment
MINN:	75%	30-40%	No Comment
UNMC:	90%	90%	No Comment
SASKAT:	No Comment	No Comment	No Comment
SIU:	15%	20%	No Comment
UMKC:	No Comment	No Comment	No Comment

Please list references on benefits or problems with the use of magnification.

COLO: A search of Medline 1965 to date using "dentistry" and "magnification" produced 4 references.

<1>

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*Eyeglasses
Human
Learning
*Pediatric Dentistry/ed [Education]
*Psychomotor Performance
Quality of Health Care
Questionnaires
Self-Evaluation Programs
Single-Blind Method
*Students, Dental
Support, Non-U.S. Gov't
Touch
Visual Perception

Abstract

Previous research has shown that accurate student self-evaluation is related to higher quality dental products. Variance in student performance still remains. Enhancement of visual perception could contribute to product improvement. Only one study has evaluated the effects of magnification on simulated dental patient care. The present study sought to determine if magnification had a positive effect on student-generated products in pediatric amalgam preparations. Fifty-two third-year students were randomly assigned to experimental (magnification) or control (no magnification) groups. Members of the experimental group used magnification in their daily work in the pediatric dentistry clinic. No significant differences between the groups' preparations or evaluations of standard preparations were found. Further study should address these issues: 1) possible effects of specific training in the use of magnification devices; 2) whether the tolerance for error in dental preparations is so great that finer vision contributes little to product improvement; 3) the role of tactile sensation in evaluation and preparation; and 4) the possible benefits of magnification for effect of age. Based on this study, it seems that requiring students to purchase magnification devices may not be justified.

Registry Numbers 8049-85-2 (Dental Amalgam).

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Publication Type Clinical Trial. Journal Article. Randomized Controlled Trial.

Language English

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Authors

Millar BJ.

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Department of Conservative Dentistry, Guy's, King's and St
Thomas' Dental Institute, London.

Title

Focus on loupes.

Source

British Dental Journal. 185(10):504-8, 1998 Nov 28.

NLM Journal Code

asw, ASW, ASW, 7513219

Journal Subset

Dentistry Journals

Country of Publication

England

MeSH Subject Headings

*Dentistry, Operative/is
[Instrumentation]

Human

*Lenses

Lighting

Optics

Abstract

This article aims to introduce the reader to the use of magnification in clinical dentistry and describes the lens systems available. The main principles of dental loupes are discussed and some of the potential problems outlined in order to help clinicians choose a magnification suited to their needs, provide years of service, and reduce the risk of eye, neck and back strain. The additional benefits and disadvantages of adding supplementary illumination, and the options available, are also considered.

ISSN

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Publication Type

Journal Article.

Language

English

Entry Month

19990107 Revised: 20001218. Entry Week: 19990107.

<3>

Unique Identifier

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PubMed Identifier

7497331

Authors

Kanca J. Jordan PG.

Title

Magnification systems in clinical
dentistry.

Source

Journal / Canadian Dental Association. Journal de l'Association Dentaire
Canadienne. 61(10):851-2, 855-6, 1995 Oct.

NLM Journal Code

chc, chc, 7907605

Journal Subset

Dentistry Journals

Country of Publication

Canada

MeSH Subject Headings

*Dentistry, Operative/is

[Instrumentation]
Human
*Lenses
ISSN
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Publication Type
Journal Article.
Language
English
Entry Month
199601 Revised: 20001218. Entry Week: 199601.

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Unique Identifier
92331011
PubMed Identifier
1628256
Authors
Fiolek D.
Title
Magnification.
Source
Journal / Canadian Dental Association. Journal de l'Association Dentaire
Canadienne. 58(5):351, 1992 May.
NLM Journal Code
chc, chc, 7907605
Journal Subset
Dentistry Journals
Country of Publication
Canada
MeSH Subject Headings
*Dentistry/is [Instrumentation]
*Eyeglasses
Human
ISSN
0709-8936
Publication Type
Letter.
Language
English
Entry Month
199208 Revised: 20001218. Entry Week: 199208.

CRE: No comment

IOWA: Benefits are obvious – students perform better in general. No specific disadvantages.

MANT: No Comment.

MARQ: No Comment

- MINN:** No Comment
- UNMC:** No Comment
- SASKAT:** No Comment
- SIU:** The only problem noted with use of magnifiers is getting used to the restricted field of vision. Also, sometimes students focus on the nitty-gritty of the prep and lose sight of the larger picture.
The benefit is obviously an increase in the quality of the restorations performed, especially better finished margins.
- UMKC:** Students can be too dependent on them, used for evaluating not for prepping.

List other benefits or problems seen/perceived with magnification.

- COLO:** The biggest problem we see is having the students use them to their full advantage. Another problem is that if a student does not UNDERSTAND the problem (preparation error for example) which needs to be corrected then magnification is of no value. Third problem is poor fitting by the manufacturer resulting in student dissatisfaction.
- CRE:** No Comment
- IOWA:** No Comment
- MANT:** No problems perceived.
- MARQ:** No Comment
- MINN:** No Comment
- UNMC:** No Comment
- SASKAT:** No Comment
- SIU:**
1. Elimination of human subjects in regional clinical board exams
 2. Schools' philosophy regarding sealing in decay
 3. Level and timing of teaching of various esthetic dentistry topics in the pre-doctoral dental curriculum
- UMKC:** No Comment

V. Regional CODE Agenda
(please report on them)

No Comments from any participants.

II. **National CODE Meeting**

A National CODE meeting will be held Thursday, February 21, 2002 4:15-6:00PM at the Fairmont Hotel in Chicago, Illinois. This is in conjunction with the annual meeting of the Academy of Operative Dentistry. Please submit 1-2 items for consideration for the 'agenda' of the National Meeting. Suggestions as to how to make this brief meeting productive and efficient are needed.

VII. **Suggestions for CODE.**

What can the organization do to improve its effectiveness?

Engage in more discussions/programs related to curriculum in pre-doctoral years.

What is suggested to improve the Web site?

<http://netserv.unmc.edu/code/codeFrame.html>

It is already quite a good web-site!

Other suggestions?

No Comments from participants

CODE Region _II (Midwest)_ Attendees Form

NAME	UNIVERSITY	PHONE #	FAX #	E-MAIL ADDRESS
Craig Phair	University of Minn	612-625-7945	612-625-7440	phair001@unm.edu
Makato Suzuki	University of Manitoba	204-789-3516	204-789-3916	Mike_Suzuki@umanitoba.ca
Craig Passon	University of Colorado	303-315-6370	303-315-0216	craig.passon@uchsc.edu
Royce Hatch	University of Colorado	303-315-6376	303-315-0216	royce.hatch@uchsc.edu
Gerald Denehy	University of Iowa	319-335-7209	319-335-7267	gerald-denehy@uiowa.edu
Deborah Cobb	University of Iowa	319-335-7214	319-335-7267	deborah-cobb@uiowa.edu
Deb Schwenk	SIU/SDM	618-474-7129	618-474-7150	dschwen@siue.edu
Poonan Jain	SIU/SDM	618-474-7073	618-474-7150	pjain@siue.edu
Jerry Woolsey	UMKC	816-235-2048	816-235-5526	woolseyG@umkc.edu
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Susan McMillen	UMKC	816-235-2100	816-235-5526	mcmillens@umkc.edu
Jim O'Meara	Creighton	402-280-3420	402-280-5094	JOMeara@creighton.edu
Cindy Carroll	Creighton	402-280-4569	402-280-5094	LCarroll@creighton.edu
William Brackett	UNMC Dental	402-472-9846	402-472-5290	wbrackett@unmc.edu
Henry St. Germain	UNMC Dental	402-472-1278	402-472-5290	hstgerma@unmc.edu
David Covey	UNMC Dental	402-472-1284	402-472-5290	dcovey@unmc.edu
Larry D. Haisch	UNMC Dental	402-472-1290	402-472-5290	lhaisch@unmc.edu
William Johnson	UNMC Dental	402-472-9406	402-472-5290	wwjohnson@unmc.edu

CODE REGIONAL MEETING REPORT FORM

REGION: III (South Midwest)

LOCATION AND DATE OF MEETING:

University of Tennessee College of Dentistry Memphis, TN

October 25-26, 2001

CHAIRPERSON:

Name: Dr. Ned Turner

Phone #: (901) 448-6930

Address: 875 Union Avenue

Fax #: (901) 448-7104

Memphis, TN 38127

E-mail : Nedturner@utmem.edu

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: James G. Fitchie

Phone #: (601) 984-6036

Address: University of Mississippi

Fax #: (601) 984-6039

2500 N State Street

E-mail : jfitchie@sod.umsmed.edu

Jackson, MS 39216-4505

Date: TBA

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC College of Dentistry;

40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290

Fax: 402 472-5290

E-mail:

lhaisch@unmc.edu

Also send the information on a disk and via e-mail with all attachments. Please indicate the software program and version utilized for your reports.

SUMMARY OF RESPONSES TO NATIONAL AGENDA: Region III

Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)

Every school in the region is developing some type of competency based testing in operative dentistry. Most schools give a series of competency exams which are factored into the students grades and as criteria for graduation.

Can there be or is there a combination of both - requirements and comprehensive care?

All schools have some type of "essential experiences," requirements, point accumulation, or some other method of ensuring a sufficient number of patient encounters with various types of preparations and restorations are accomplished. Most schools strive to have comprehensive care for their patients, but they also recognize the potential for students to provide comprehensive care to a large portfolio of patients, but due to the patient mix, may not encounter all of the experiences necessary to have a broad based, complete education. In those cases, some individual treatment may be necessary vs comprehensive care to all patients.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

This varies greatly among schools, primarily based on the physical constraints of the building in which the clinic is housed as well as the number of faculty available to supervise patient care.

What is your method for determining and maintaining competency?

Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.

All schools have some type of recurring competency exams, but the type and method of testing vary greatly between schools. Most schools have at least two faculty members who independently evaluate competency exams.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

All schools have some type of non-patient competency exam. Typically, these are done in the pre-clinical labs, but some have competencies that are done during the clinical years, particularly with cast restorations.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

Responses to this question vary greatly based on the number of lab personnel within each school. Most students are given the option to use the lab, either in house or out sourced, at least by their fourth year. Most schools require all pre-clinical lab work to be accomplished by the students.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or “soft start” curing (stepping, ramping, pulsing)?

Schools are generally using halogen VLC lights clinically and pre-clinically. Discussion in lectures may include arc lights, lasers, ramp curing and LED lights.

What evidence are you using to support the utilization (if doing so) of this curing approach vs. the conventional method?

See individual responses.

IV. Magnifiers

Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers? Please identify type.

All schools encourage magnification, although only the University of Tennessee has specific requirements for magnification. Although not required, most students seem to purchase some type of system prior to graduation.

If not used, is a certain level or quality required? Please indicate.

The schools within this region were not sure what was being asked by this question. It was felt that the question referred to the quality of work being done by the students, clinically as well as pre-clinically. All schools emphasized that the highest quality of dentistry was expected and required of the students irrespective of whether magnification was used or not.

Which year(s) and in which disciplines are they being utilized?

At Tennessee, magnification is required in all pre-clinical and clinical disciplines beginning in the first year of school. Schools that don't require magnification allow students to use them when the student desires to do so.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories?

Response Range: Preclinical laboratories 20-100% , Clinic 25-100%

Please list references on benefits or problems with the use of magnification. List other benefits or problems seen/perceived with magnification.

Benefits:

- a. Improvements in posture*
- b. Less eye strain or fatigue*
- c. Less muscle fatigue*

Problems: dependency upon magnification

2001 NATIONAL CODE AGENDA REGION 3 RESPONSES

(Please cite the evidence were applicable)

I. Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)

UTH: We include competency examinations during the course of the 2nd, 3rd and 4th years. Each year has one “bench” exam where the student performs certain procedures on a Dentaform. Obviously this has no direct effect regarding comprehensive patient care, it is strictly a “requirement” within various clinical courses, utilized to assess fundamental conceptual knowledge and hand skills. We also include clinical competency examinations in the 3rd and 4th years. These examinations are integrated into the students’ normal course of comprehensive patient care.

LSU: Currently our school has no requirement for comprehensive care. Our department of Operative Dentistry only covers the first three years. We are totally concerned with specific requirements. The forth year is only General Dentistry and is maintained by the Dept. of General Dentistry. They do not have a comprehensive care requirement. There is a desire for the students to complete patients. Seniors are on a point system to complete their senior year. A number of points are awarded when a patient is completed. This may not reflex work done by the senior though. Our students maintain a mini-clinic system consisting of one senior, one junior, one sophomore and a hygiene student. Each mini-clinic handles about 45 patients. And all these students, only within their mini-clinic, share the work.

UTH-SA: The dental school has a document containing the competency statements for the school. Each course in the curriculum is required to document which competencies they address and how they test for competency. We no longer have specific procedure requirements. Each student must do a certain amount of operative dentistry, based on a grade-difficulty point system, to pass the course and to earn different grade levels on the "daily work" portion of the grade. The "daily work" portion counts as one-sixth of their Clinical Operative Dentistry grade; the other five-sixths come from the five competency examinations which each student must pass to earn a passing grade in the course.

Baylor: Note: Third year dental students (D-3) are taught by faculty of the Operative Division of Department of Restorative Sciences. Fourth year dental students (D-4) are taught by faculty of the Department of General Dentistry

D-3: We no longer have requirements, we have “essential experiences.” The following is a summary of essential experiences expected of students.

Class II restorations: 5 Class II (a minimum of 2 amalgams and the other 3 can be either amalgam or composite)

	1 Class II amalgam clinical progress examination
Composite restorations:	2 Class III 1 Class III composite clinical progress examination
Cast gold restorations:	2 typodont restorations, 1 Class II inlay and 1 onlay. (Summer Session progress examination) 2 clinical cast gold restorations (Class II inlay, onlay, $\frac{3}{4}$ crown, or $\frac{7}{8}$ crown) 2 typodont restorations, 1 Class II inlay and 1 onlay (Spring Semester progress examination)
Other restorations of choice:	31 restorations

A total of 47 restorations

D-4: Closer to true comprehensive care. Students are required to finish all case patients and fulfill their treatment needs. However, patients are chosen for each student's family of patients to include a representation of treatment from all the disciplines based on specific guidelines. These guidelines are not published for the students but the D-4 faculty are aware of them.

OU: We have a competency document that lists the major areas in which we feel our students should be competent upon graduation. We have instituted competency examinations that evaluate the students' competency in these areas independent of assistance from the faculty. We feel that we measure competency in these major areas with these evaluations. We do not feel that passing the competencies in these major areas will allow the student enough experience to learn to adapt to all of the different situations that may arise during clinical practice. Because of this, we do feel that a certain number of clinical experiences in different disciplines are needed to allow our students to learn to deal with the multitude of variations that can be confronted during one single type of procedure. Just because they can exhibit competency on an ideal Class II restoration does not mean, for example, that they could know how to deal with a situation which involves a Class II lesion extending subgingivally in the interproximal box.

UMS: We are handling this curriculum issue of requirements vs. comprehensive care by having a combination system. Students have to meet certain guidelines or thresholds before being eligible to take competencies in Class I, II, and III situations. These guidelines are set by a point system based on 70-100 for each operative procedure depending on the quality or grade achieved. Amalgams and composites have specific guidelines for junior and senior years. Patients may not have all their work performed by the same student depending on the patients specific needs; however, the patient will have work completed within a team of students consisting of 2 seniors, 2 juniors, and 2 sophomores. The patient care coordinator tries to keep the patient within a team to complete their work in a "comprehensive nature". To transfer a patient, a student must fill out a provider sheet in the patient record with the signature of the patient care coordinator. Once treatment is complete, a post treatment evaluation is required by the patient care coordinator's office. Completed patients are then transferred to the dental hygiene program, located within the dental school, for recalls.

TENN: All departments are developing competency based clinical examinations, and some are developing pre-clinical lab exams that are competency based as well. For example, in Operative Dentistry, graduation criteria dictate that a student must successfully pass a clinical exam for Class I, II, III, and V restorations. These exams can only be challenged after a minimal number of clinical experiences have been accomplished in the respective area. In addition to successfully passing the clinical exams, a designated number of specific and elective procedures are necessary to ensure a complete and well rounded education is successfully completed prior to graduation.

Can there be or is there a combination of both - requirements and comprehensive care?

UTH: We utilize both. They are not mutually exclusive. In our school the students are expected to treat all patients that are assigned to them in a comprehensive manner. The responsibility for them to receive the minimum number of essential experiences (requirements) resides with a group of faculty who function as Practice Leaders. This group of faculty assign a family of patients to each student. Upon completion of comprehensive patient care for their family of patients, the student will have accomplished the stated minimum essential experiences (requirements). Included in the student's overall grade, are quality of patient care and productivity components. If a student only accomplishes the minimum, they will only receive a minimum passing grade. Their grade increases as their quality of care and productivity increases.

LSU: There is no requirement for comprehensive care. There should be at some point in their dental education. Because our department stops supervision of Operative Dentistry procedures at the end of their third year, we don't have time for extra concerns.

UTH-SA: The philosophy of the school is for students to deliver comprehensive care to their patients. The assignment of patients to each student is intended to provide them with the variety and exposure necessary to become proficient in the various disciplines. Students are required to take care of the treatment needs in their family of patients and to pass the competency examinations outlined by each discipline. In the senior year they must also sustain an expected level of activity in each discipline without arbitrary numbers of specific procedures required.

Baylor: Yes, there can be a combination of both and this is obvious from the answer to the last question, above.

OU: We feel that there can be. It requires regular and frequent monitoring to assure that patients are being treated through a sequenced treatment plan and in a timely fashion. This is monitored at our institution through regular auditing of the student's patient records. Another thing that we are trying to do to avoid a conflict between "requirements" (which we term "minimum clinical experiences") and comprehensive care, is to make our "requirements" as flexible as possible. If the required minimum clinical experiences are too restrictive in how they can be met, it may lead to some desperate attempts by students to meet the requirements resulting in disregard for the well being of the patient. We are considering implementing some sort of "team" grouping system to track and facilitate students in meeting their required number of

minimum clinical experiences while insuring the comprehensive and effective treatment of the patient.

UMS: We believe there can be a combination of both if there are allowances for treatment within a team of students to complete patient care in a comprehensive manner. However, this is not a perfect system. There are times when patients may be transferred out of the team to other students needing specific procedures. In a strict sense, they are still getting their work completed although it may involve multiple students.

TENN: Currently, there is no stipulation to provide comprehensive care. Graduation is based on specified point totals and successful completion of clinical exams. However, in spite of the fact that requirements exist, the students are assigned patients in their portfolio in an effort to provide comprehensive care. It is hoped that all the patients dental needs will be handled by the same student. With graduation and complexity of cases, this is not always possible. Some of this care may be delivered in somewhat of a team approach where 2-3 students work together to complete the overall treatment plan, but this is not common. Generally speaking, once a student is assigned a patient, they are responsible for all of the patient's treatment. Efforts are made to provide the students with an appropriate mix of patients so that the patient's needs are fully met while the student completes the necessary experiences to finish their education.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

UTH: In the 2nd and 3rd years they do not have assigned cubicles. They generally treat patients in a "bay" that is designated for a specific discipline. In the 4th year they do have their own operatory and are expected to complete as much of the comprehensive treatment as is possible under the direction of a "Primary Bay Instructor." In our senior clinic our Primary Bay Instructors are all general dentists with no specialty training.

LSU: In the sophomore year, the students are assigned to a specific cubicle; but they only do Operative Dentistry. The juniors have specific areas to sign up for each discipline. They must arrange with the patients to schedule their appointments. They can participate in each of these areas whenever it's convenient for them. We are currently looking into other systems.

UTH-SA: In the junior year, students do not have their own cubicle but share cubicles in a team area for most of their clinical procedures. They participate in a block rotation (Complete Dentures) and sometimes take their patients to a separate discipline-specific clinic (Endo, Oral Surgery, Pediatric Dentistry, etc.).

In the senior year, we have a general practice-based environment where the each student has his/her own cubicle and is supervised by a General Practice faculty member.

- Baylor:** D-3 No assigned cubicles; go to discipline specific based on the treatment needs of the patient and also have block rotations in Oral Diagnosis, Radiology, Oral Surgery, Orthodontics, and Pediatric Dentistry.
- D-4 Assigned areas (8 chairs) for each group (5 groups) in our main clinic. They go to the following discipline specific clinics: Oral Surgery and Periodontics as needed for patient care. Also, they have block rotations in Oral Diagnosis, Radiology, Oral Surgery, and Pediatric Dentistry. In the Pediatric Dentistry rotation, the students have assigned patients, unlike in the D-3 rotation. Also, they have rotations in pediatric emergency duty, sealant clinic, and pediatric dentistry clinics outside the college.
- OU:** Our students go to a discipline specific clinic based on the treatment needs of their patient. They do participate in an emergency clinic rotation, and an oral surgery rotation, but they are responsible for the comprehensive care of their family of patients.
- UMS:** Students go to discipline specific clinics based on patient's treatment needs. They also have certain assigned block rotations at various times throughout the year such as Acute Illness, VA, and DAU.
- TENN:** Until this year, students had their own assigned cubical for restorative and periodontal procedures. They were required to go to oral surgery, pediatric dentistry, orthodontics and endodontics. Due to faculty constraints, the students are now assigned to a restorative clinic, but not their own cubical. They continue have block rotations in surgery, oral diagnosis, orthodontics and pediatric dentistry and are required to deliver the care within those respective clinics.

What is your method for determining and maintaining competency?

Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.

- UTH:** See the above-mentioned series of competency examinations (which includes a "mock" board examination).
- LSU:** The students are required to complete a specified number of restorations before they are allowed to take a competency exam on a patient. The student will present a patient for a certain competency. They select the case. Two instructors give a starting check. Both instructors evaluate the preparation and a grade is determined as a joint effort. The final restoration is evaluated and the two instructors determine a grade. Both steps must pass. If one step is unsatisfactory, the competency exam is retaken until passed. Only the grades earned at the first attempt are averaged and any further attempts are on a pass/fail basis. After the first unsatisfactory attempt the course director will determine if some remediation is needed before the next attempt at that competency is taken. If the course ends before a successful competency is achieved the student will fail the course.
- The sophomore student must successfully complete competency exams for a class 1 amalgam, a class 1 composite and a class 5 resin. The junior dental students must complete a class 2 amalgam, a class 2 composite and either a class 3 or 4 composite clinically.

In the past there was a clinical cast gold competency but because of difficulty in providing patients for these restorations it was discontinued.

UTH-SA: Each discipline decides how to determine and test for competency. In Operative Dentistry, competency is determined through a combination of didactic, laboratory and clinical examinations. Both clinical and preclinical competency examinations must receive passing grades in order for the student to pass the course. Extra time is scheduled in the preclinical courses to allow for retakes. Detailed criteria sheets are used to grade and give feedback for both clinical and preclinical daily exercises and for competency examinations. (refer to supplement for UT San Antonio clinical evaluation form for direct restorations)

Baylor: D-3 Daily work; instruction and supervision of patient treatment. Plus competency examinations as outlined above.

D-4 Daily work; instruction and supervision of patient treatment. Competency examinations as follows:

Typodont progress exam: 1 Class II inlay and 1 onlay
Class II Amalgam & Class II Composite clinical progress exam
Class II gold inlay or an onlay clinical progress examination
Mock Board examination

OU: As mentioned above we have various competency exams to evaluate the competencies related to our department's discipline.

The competency examinations begin when the students are second semester freshmen and continue until they have graduated. The competencies evaluate the students at each level of experience from novice to competent clinician.

In the first preclinical operative course, the competency examination requires that they be able to complete a Class II cavity preparation for amalgam and a Class II amalgam restoration on a typodont while working on the bench top. They are allowed three attempts during the semester to show their competency on these procedures. If they are not able to exhibit competency on one of these three opportunities, then they must proceed with remedial work and retake the competency prior to matriculating to the second preclinical operative course.

In the second preclinical operative course the competency examination requires that they be able to complete a Class II cavity preparation for amalgam, a Class II amalgam restoration, and a Class III preparation for resin composite on a typodont while working on the bench rod. This competency examination is administered at the end of the course, and must be acceptably completed prior to the student entering patient treatment in the operative clinic. If they are not able to accomplish this, then they must proceed with remedial work and retake the competency prior to matriculating to patient treatment in the operative clinic.

In the clinic we have several competency examinations distributed over the third and fourth years of the students education.

Third year:

Fall Semester

Two competency examinations must be completed during this semester. They may be either a Class I or a Class II amalgam restoration.

Spring Semester	Two competency examinations must be completed during this semester. One must be a Class II amalgam restoration and one must be a Class III, IV, or V resin composite restoration.
Summer Session	Two competency examinations must be completed during this semester. One must be a Class II amalgam restoration and one must be a Class III, IV, or V resin composite restoration.
<u>Fourth year:</u>	
Fall Semester	Two competency examinations must be completed during this semester. One must be a Class II amalgam restoration and one must be a Class III, IV, or V resin composite restoration.
Spring Semester	One competency examination must be completed as part of the mock board exercise. This must be Class II amalgam restoration. (We may open this up in the near future to also include the option of a Class II resin composite restoration)

UMS: We are handling competency based operative education by having several stages of competency leading up to a final competency exam given towards the end of the senior year. During our first two operative courses, practical exams are given on typodonts at the midterm and final written exam periods. The practical must have a passing average of 70 or better. The practical involves Class I or II amalgam prep and restoration or Class III composite prep and restoration depending on the specific course without faculty input. The second stage of competency in the junior year involves Class I, II, and III competency situations on clinic patients. The third stage during the senior year involves Class II and Class III competencies on patients. The final stage is determined during the senior comprehensive exams similar to a mock board exam where Class II and Class III competencies are examined again. These are technical skill examinations where no faculty input is permitted and patterned after our state board exam.

TENN: Students are required to demonstrate competency through a clinical exam on restoration of Class I, II, III and V lesions. If a student is unsuccessful in the clinical exam, they are required to repeat it with or without remediation, depending upon the circumstances surrounding the failure. Even if students pass their clinical exams, they are still evaluated by the faculty on every clinical procedure. In the event they demonstrate lack of knowledge or ability to successfully treat patients, irrespective of whether they have passed the clinical exam or not, remediation may be required. The type of remediation is designed specifically for each student based on individual deficiencies.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

UTH: See the above-mentioned “bench” examinations. Also, we include written examinations pertaining to clinical decision-making skills.

LSU: In the junior year we have several non-patient competency exams. Since our state board test for preparations for plastic typodont teeth we also test for these preparations. The students will cut four preparations on a typodont manikin on the tabletop, not in manikins for simulation. These are given twice for a total of eight exams. Any failures and that preparation must be repeated until successful or the course ends. We also give a competency for preparing a tooth for a gold casting and

producing an acrylic provisional restoration on a typodont. This preparation is prepared on a tooth we simulated to have an old DO amalgam removed leaving some cusps or marginal ridges undermined or weakened. The student must decide what cusps to cover, additional boxes, etc. They are given a practice session on this procedure a few weeks before they must complete this for a competency.

UTH-SA: The Operative Dentistry Division utilizes non-patient-based examinations for all preclinical examinations and for the complex amalgam competency examination in the junior clinical year. Each of these examinations utilizes special "situation teeth" which refer to simulated clinical situations. Each "situation tooth" has an accompanying scenario with information about the patient, the oral situation, and the individual tooth.

We are comfortable to certify the student as competent to proceed to the next academic year using this format. In the senior year, the students have four non-patient-based exercises in preparing inlay and onlay preparations to help prepare them for the Western Regional Examining Board.

Baylor: The non-patient competency exams are done on the typodont. (See prior answers.) These exams are given in the laboratory and are table-top. However, next year we have a simulation laboratory (100 units) available for these non-patient progress examination. This will simulate patient treatment much better than the table-top method.

Yes, we are very comfortable in utilizing our present methods for rating student competence. With the availability of the simulation laboratory, our methods should be even better than now and competency easier to determine.

The number of procedures completed by our students in the third and fourth years gives us ample opportunity to fairly judge the level of competency achieved. Occasionally, students are required to remediate or to repeat entirely either the third or the fourth year of study, or both, in order for them to achieve the level of competency expected for graduation.

OU: Our preclinical courses have competency examinations administered on typodonts (See above). All clinical competency examinations are administered utilizing actual patients.

We feel that, as long as we can incorporate our clinical competency examinations into the orderly delivery of a predetermined sequenced treatment plan, we are very comfortable with the use of the "live patient" for our examinations.

The idea of assessing competency is to evaluate it in an authentic setting that is as close to the actual setting of a practicing clinician as possible. We do not feel that a typodont in a laboratory can provide this experience for the student's competency examination.

UMS: Yes. We have non-patient competencies called practicals given on typodonts during the 1st and 2nd years: Class I amalgams, Class II amalgams, and Class III composite. These typodont exercises are given as midterm and final practical exams without any faculty input. Also, we have graded exercises given during the courses that have some faculty input, which give us some idea of level of competency before the final practical exams. We are somewhat comfortable with

our present methods. However, there are times when weak students enter the clinic in spite of our current competency exams.

TENN: Competency exams are given in the first and second year pre-clinical operative laboratories. Students are given both graded and non-graded exams and are required to demonstrate competency at all levels. Failure to achieve competency results in individual remediation, which specifically addresses the recognized deficiency. A student must successfully complete all competencies in order to complete the course requirements. Failure to demonstrate competency at all levels will result in a grade of "incomplete" irrespective of the overall course average. Summer remediation is provided for those receiving an incomplete in the first year operative course. This concept was initiated last year, and appeared to be very successful. It is being utilized again this academic year. The students who were evaluated in this manner have yet to enter the clinic to treat patients, so the long term benefit has yet to be determined.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

UTH: None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

The student performs all laboratory work involving gold inlays and onlays. Once third year students meet their minimum requirements, they are allowed to send future cases to the laboratory. All ceramic cases are sent to the laboratory.

LSU: The students have the option of doing their own lab work or sending it to the lab. Porcelain onlays must go to the lab. Indirect composite restorations and cast gold restorations can be done by the student or sent to a lab. Students sending cases to the lab must, pour and trim their dies and mount the case on an articulator. We are now using magnetic mounting rings so the student will not have to send their articulators away. The student will receive a grade for their model work when the present to us the lab prescription. In the past we have had too much trouble with students doing other students work while more conscientious students were at a disadvantage.

UTH-SA: Indirect castings are covered by Fixed Prosthetics Division. Students must pour and prepare casts and trim dies. For the first procedure, a diagnostic wax up is required. Most of the laboratory work, after preclinical courses, is done by an in-house laboratory. If a student needs a more rapid turn-around than the lab can supply, he/she may do her own waxing and casting for gold restorations. Some all-ceramic work is sent to laboratories outside the school; for those cases, a higher fee is charged the patient to cover the additional laboratory costs.

Baylor: D-3 Students are required to do all lab work except porcelain. The porcelain is completed by our in-house lab. For porcelain fused to gold crowns, they must do the cast substructure.

D-4 Fourth year students have the option of doing the lab work or using commercial labs.

- OU:** After the completion of 85 points (equivalent to 8-10 units), the student has the option to have a lab complete some or all of their work. They are credited with fewer points if the lab does the work. After 85 points are accumulated, points are awarded on the following basis:
- Full credit for all points are awarded to the student if they do all of their own lab work.
 - 90% of the points are credited if the student allows the lab to complete casts and dies.
 - 65% of the points are credited if the student allows the lab to do all of the lab work.
- UMS:** Students do model, die and wax-ups for any gold casting from single units to fixed partial dentures including onlays and full gold crowns. In-house technicians will cast the invested patterns for them. They are required to do model and die work only for single unit PFM's and PFM bridges.
- TENN:** Pre-clinical work is performed by the students. Once a student reaches the clinic, they are given the option of having their lab work done by an in house lab or completing it themselves. Most students elect to have their work done by the lab.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or "soft start" curing (stepping, ramping, pulsing)?

- UTH:** Newer curing light approaches are taught in our second year Operative Dentistry II course. Plasma arc, laser, and "soft-start" curing are discussed in the lecture part of the course.
- LSU:** The junior students receive a one-hour lecture on photo polymerization of resin-based composite. The lecture includes 1) basic polymerization reactions, 2) evaluation of adequate polymerization--percent conversion and Knoop hardness, 3) Factors affecting polymerization--constituents of the RBC, shape of the cavity prep, visible light curing unit, and clinicians technique.

Under VLC units, QTH, high-intensity QTH, variable output QTH (soft start) units, plasma arc, laser and LED units are discussed.

The students purchase their own QTH curing light. We are still recommending 2mm incremental curing and in general, curing for 40 seconds per increment unless the RBC specifies a 20 second cure. The evidence for soft curing or bulk curing is not conclusive, yet.

Manufacturers developed curing-lights with variable output (softstart-polymerization) in order to reduce and/or delay the amount of polymerization stress. Step-curing, ramp-curing, and pulse-delayed curing all start with a reduced intensity and later utilize full power. Many researches have found improved marginal integrity with

these techniques (Uno and Asmussen 1991) (Feilzer, Dooren et al. 1995) (Mehl, Hickel et al. 1997) (Kanca and Suh 1999). However, not all researchers have had positive results with these methods (Sakaguchi and Karren 1997) (Garcia-Godoy and Puppini Rontani 1999) (Walker and Burgess 1999) (Friedl, Schmalz et al. 2000).

Incremental curing is recommended to fully polymerize the resin-based composite (Rueggeberg, Caughman et al. 1994). Whether light-curing in increments reduces stress or microleakage is less clear (McCulloch and Smith 1986) (Suliman, Boyer et al. 1993) (Winkler, Katona et al. 1996) (Mangnum, Berry et al. 1994) (Versluis, Douglas et al. 1996) (Jedrychowski, Bleier et al. 1998). Bulk-curing is desirable because of its efficiency and the trans-enamel polymerization (TEP) technique is thought to provide adequate polymerization (Belvedere 2001). If practitioners are experiencing success with bulk curing, perhaps the current polymerization standard is too stringent. This is an area that needs further research.

Plasma arc lights, lasers and LEDs are too expensive to be used routinely by dental students, but this may change in the future.

UTH-SA: It is **NOT**, except by mention during lectures and inclusion of the use of PAC lights into an elective course. The use of “soft start”, etc. has not been included in the regular curriculum, because the literature support is conflicted.

Baylor: D-3 At this level, the students have sufficient information to contend with and are confused sufficiently that these newer curing light approaches are not taught.

D-4 The fourth year students are taught didactically about these newer devices.

We do not use any of these modalities in clinical treatment because we do not have any of this equipment available for general use.

OU: We discuss the various types of curing lights and the theories of the different techniques in our lectures. We use a halogen light that has the capability of adjusting the intensity of the light between 300 mw/cm² and 800 mw/cm². We do not teach the use of “ramping “ or the use the of laser/plasma arc lights. At this time we are not sure which, if any, of these techniques is better than simply curing with a traditional halogen light at an intermediate intensity (550 mw/cm²).

UMS: We will give response at the meeting.

What evidence are you using to support the utilization (if doing so) of this curing approach vs. the conventional method?

UTH: We use conventional, halogen curing lights in the preclinical laboratories and in the clinic. Some students and faculty utilize a “soft-start” technique by varying the curing tip distance to the resin composite in the initial stages of light-curing. Polymerization techniques are presented to our students as detailed in our second year Operative textbook, *The Fundamentals of Operative Dentistry A Contemporary Approach*, James Summitt, et.al.

LSU: There is evidence supporting all these methods and equipment, however; at this time it is difficult to justify the additional cost. We have been doing some work

evaluating several of these newer systems. As with all new technology there are pros and cons that have to be evaluated.

UTH-SA: Some references that demonstrate the conflicted evidence follow:

Asmussen E, Peutzfeldt A. Influence of pulse-delay curing on softening of polymer structures. J Dent Res 80(6):1570-1573, 2001. Pulse-delay technique led to polymers of increased susceptibility to softening in ethanol.

Sahafi A, Peutzfeldt A, Asmusen E. Soft-start polymerization and marginal gap formation in vitro. Am J Dent 14:145-147, 2001. Soft-start polymerization procedures studied did not improve the marginal adaptation of two resin composites bonded to dentin cavities compared with conventional polymerization.

Yap AU, Ng SC, Siow KS. Soft-start polymerization: influence on effectiveness of cure and post-gel shrinkage. Oper Dent 26:260-266, 2001. Soft-start polymerization involving step-wise modulation of light energy does not reduce the effectiveness of cure. No significant reduction in polymerization shrinkage was observed with the soft-start curing regimen.

Dennison JB, Yaman P, Seir R, Hamilton JC. Effect of variable light intensity on composite shrinkage. J Prosthet Dent 84:499-505, 2000. Sequential curing of composites from low to high intensity reduced polymerization shrinkage without compromising depth of cure.

Friedl KH, Schmalz G, Hiller KA, Markl A. Marginal adaption of Class V restorations with and without "soft start-polymerization". Oper Dent 25:26-32, 2000. "Polymerization-polymerization" using a very low start curing light intensity does not provide better marginal adaption in Class V composite resin and polyacid-modified resin restorations.

Baylor: Not applicable.

OU: We are using a conventional method. There seems to be evidence for both methods. We are not sure at this time which technique is the best practice. The following represents some of the evidence regarding these techniques:

Research in regard to the plasma arc curing light tends to suggest that the polymerization characteristics and resulting physical properties of the resin composite materials may be less than optimal.

Sharkey S, Ray N, Ziada H, Hannigan A. Surface hardness of light activated resin composites cured by two different visible-light sources: an in vitro study. Quintessence International.2001; 32(5):401-5

Peutzfeld A, Sahafi A, Asmussen E. Characterization of resin composites polymerized with plasma arc units. Dental Materials 2000; 16(5):330-336.

Stritikus J, Owens B. An in vitro study of microleakage of occlusal composite restorations polymerized by a conventional curing light and a PAC curing light. J of Clinical Pediatric Dent 2000; 24(3):221-227.

Hofmann N, Hugo B, Schubert K, Klaiber B. Comparison between a plasma arc light source and conventional halogen curing units regarding flexural strength, modulus, and hardness of photoactivated resin composites. *Clinical Oral Investigations* 2000; 4(3):140-147.

Munksgaard EC, Peutzfeldt A, Asmussen E. Elution of TEGDMA and BisGMA from a resin and a resin composite cured with halogen or plasma light. *European Journal of Oral Sciences* 2000; 108(4):341-5.

Some of the research in regard to the use of a “ramping” or “pulse” type of cure (going from an initial low intensity followed late by a higher intensity light) indicates that this technique may reduce polymerization contraction stress.

Yoshikawa T, Burrow MF, Tagami J. A light curing method for improving marginal sealing and cavity wall adaptation of resin composite restorations. *Dental Material* 2001; 17(4):359-366.

Silikas N, Eliades G, Watts D. Light intensity effects on resin-composite degree of conversion and shrinkage strain. *Dental Material* 2000; 16(4):292-296.

Kanca J, Suh BI. Pulse activation: reducing resin-based composite contraction stresses at the enamel cavosurface margins. *American Journal of Dentistry* 1999; 12(3):107-112.

Burgess JO, DeGoes M, Walker R, Ripps AH. An evaluation of four light-curing units comparing soft and hard curing. *Practical Periodontic & Aesthetic Dent* 1999; 11(1):125-132.

Feilzer AJ, Dooren LH, de Gee AJ, Davidson CL. Influence of light intensity on polymerization shrinkage and integrity of restoration-cavity interface. *European Journal of Oral Sciences* 1995; 103(5):322-326.

UMS: Will give our research info at meeting.

TENN: Currently these systems are not taught. Some of these units have been and are continuing to be evaluated by the faculty, but at this time, they have not demonstrated significant benefit over conventional VLC systems. Plasma arc systems appear to result in increased polymerization shrinkage and less than optimal physical properties. Ramp lights appear to show promise, but questions still remain regarding the benefit vs. cost and time when compared to a conventional VLC system.

Stritikus J, Owens B. An in vitro study of microleakage of occlusal composite restorations polymerized by a conventional curing light and a PAC curing light. *J of Clinical Pediatric Dent* 2000; 24(3):221-227.

Peutzfeldt A, Sahafi A, Asmussen E. Characterization of resin composites polymerized with plasma arc units. *Dental Materials* 2000; 16(5):330-336.

Sharkey S, Ray N, Ziada H, Hannigan A. Surface hardness of light activated resin composites cured by two different visible-light sources: an in vitro study. *Quintessence International*.2001; 32(5):401-5

Burgess JO, DeGoes M, Walker R, Ripps AH. An evaluation of four light-curing units comparing soft and hard curing. Practical Periodontic & Aesthetic Dent 1999; 11(1):125-132.

IV. Magnifiers

Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers?
Please identify type.

UTH: First year students are required to purchase magnification (2.5x). Most participate in the Design for Vision Student Scopes program, although they are free to purchase surgical loupes from any manufacturer.

LSU: There is no requirement for magnification.

UTH-SA: Although none is yet required, most students now use some form of magnification. Beginning in August 2002, freshman students will have in their kits inexpensive Universal Dental Co. (formerly Lactona) 4X Visor Loupes magnifiers. In first semester of the sophomore year, manufacturers of high-end magnifiers (Designs for Vision, Heine, Orascoptic, SheerVision, Surgitel, Carl Zeiss Surgitel,) will make presentations to students, and they will be encouraged to purchase (with coverage on the "expected equipment" list to enable the funds to come from student loans) one of the higher-end sets of magnifiers

Baylor: In the first year (D-1) kit, the Opti-Visor 2X, produced by Donegan Optical Company of Lenexa, KC, is included.
Later, a number of the students will purchase the telescopic type magnifiers of their choice for use in the clinic.

OU: No, we don't require students to have magnification. Although we believe that magnification should help in student performance, there is not a lot of evidence to support this theory.

Donaldson ME, Knight GW, Guenzel PJ. The effect of magnification on student performance in pediatric operative dentistry. Journal of Dental Education 1998; 62(11):905-910.

Based on this study, requiring students to purchase magnification devices may not be justified.

Leknius C, Geissberger M. The effect of magnification on the performance of fixed prosthodontic procedures. Journal of California Dental Association 1995; 23(12):66-70.

Based on this study, the performance of dental students using magnifiers exhibited only half of the number of errors that were committed by students not using magnifiers.

Not Required.

TENN: Effective last academic year, incoming students were required to purchase magnification as part of their instrument package. The college evaluated various systems available on the market and decided to contract with GSC, specifically utilizing the Surgitel flip-up system at a magnification of 2.5X. It was felt that this was an appropriate level of magnification for the students and by staying with one company and a specific system, standardization could occur, resulting in a better product and service for the students. Currently, we are evaluating the performance of students in previous years without magnification with the class with required magnification.

If not used, is a certain level or quality required? Please indicate.

UTH: Magnifiers, surgical loupes with 2.5x magnification are used (required) in pertinent preclinical courses and in the clinics.

LSU: We expect the highest level or quality, with or without loops. They are encouraged to get magnification. Most of the instructors use them when working with the students in both lab and clinic. The students know that the faculty uses them when they evaluate their performances.

UTH-SA: No response.

Baylor: Except for the D-1 issue, the students are allowed to purchase and use the magnifiers of their choice.

OU: Not sure what this question is asking. We do not require students to have magnification. If the question is asking whether we allow a lower level of quality in the work because the students do not have magnification, the answer is no.

UMS: Students are required to achieve a grade of 70 or above on competency exams or practicals. If we see a repeated quality problem with a student magnification with a student, magnification may be suggested.

TENN: Not applicable.

Which year(s) and in which disciplines are they being utilized?

UTH: The major suppliers of surgical loupes present their products to our first year students in scheduled presentations. Students purchase magnifiers in the first year. Magnification is utilized in all relevant preclinical courses, especially the Operative courses, and in clinic.

LSU: They're used in all four years, even the freshman year.

UTH-SA: No Comment

Baylor In the laboratory for pre-clinical work and in the clinic when they begin there. Therefore, the magnifiers are being utilized throughout all 4 years at the discretion of each student.

- OU:** Many students purchase some form of optical magnification the first year for use in the preclinical operative dentistry courses and later in the clinic.
- UMS:** A few students use magnification in the operative and fixed clinics during the 3rd and 4th years. This is optional.
- TENN:** Magnification is now required for all incoming students. It is utilized in the fixed prosthodontics pre-clinical lab as well as operative lab. Magnification will also be required once the students enter the clinic. The current third and fourth year classes were not required to purchase magnification systems, although about 50% of them use one type of system or another.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

	preclinical labs	clinic	Addtl notes
UTH	100%	100%	No Comments
LSU	70%	90%	No Comments
UTH-SA	95%	95%	No Comments
Baylor	20%	50%	No Comments
OU	80%	80%	No Comments
UMS	25%	25%	No Comments
TENN	100%	100%	No Comments

Please list references on benefits or problems with the use of magnification.

- UTH:** Magnification is discussed in the textbooks we use for the two Operative courses; **first year Operative textbook**, *Sturdevant's Art and Science of Operative Dentistry*, Theodore Roberson, et.al., **second year Operative textbook**, *The Fundamentals of Operative Dentistry A Contemporary Approach*, James Summitt, et.al. Caplan SA. Magnification in dentistry. *Journal of Esthetic Dentistry*. 2(1):17-21, 1990 Jan-Feb.
- LSU:** We have no references.
- UTH-SA:** *Leknius C, Geissberger M. The effect of magnification on the performance of fixed prosthodontics procedures. J California Dent Assoc, Dec 1995.* Dental students who performed fixed prosthodontics procedures while using magnifiers were found to have committed half as many errors as students who performed the same preparation without the aid of a magnifier.
- Baylor:** Benefits: Margins of preparations can be seen better both in the mouth and in the laboratory. This increases the clarity of both preparing the tooth

and finishing the restoration. With veneers, it is easier to distinguish restorative material from tooth structure.

Reference: Reality, Volume 14

OU: Benefits: Obvious benefit is the improved ability to identify:
-caries and decalcification.
-marginal discrepancies on restorations
May reduce back problems by reduction of bending over patient for better vision.

Problems: Once you have worked with magnification it is difficult to work without it.

UMS: Benefits: a. Improvements in posture
b. Less eye strain or fatigue
c. Less muscle fatigue

References: Journal of Esthetic Dentistry. Caplan, SA 2(1) 17-21, 1990 Jan-Feb
Journal of Esthetic Dentistry. Strassler, HE 2(6) 183-4, 1990 Nov-Dec

Problems: Depth of field

TENN: Benefits: Improved posture, improved ergonomics, less muscle and eye fatigue, improved quality of work (perceived).

Problems: Dependence

List other benefits or problems seen/perceived with magnification.

UTH: The major benefit of magnification is that it provides increased, thereby improved visualization of the surgical field. Dentin and enamel can be closely examined for disease processes, aged or newly placed restorations can be evaluated, and nuances such as microfractures and cracks within enamel and dentin can be visualized and addressed. When both students and faculty use magnification, everyone visualizes the same surgical field, which facilitates communication and appropriate patient care.

A drawback for some students is the cost of surgical loupes, which is the required product; however, the cost is included in their first year student loan package. A clinical concern is monitoring infection control as it relates to all types of magnifiers.

LSU: Benefit in evaluation of lesions in fissures.
Problem for students is there is a learning curve getting use to them.

UTH-SA: *Whitehead SA, Wilson NHF. Restorative decision-making behavior with magnification. Quintessence Int 23:667-671, 1992.*

Restorative decision-making behavior was modified when magnification was used, with an increase in the number of restorations planned for replacement and increase in the number of tooth surfaces planned for restoration. This article concluded that, as part of the process of adapting to the use of magnification, clinicians should review their decision-making behavior. I believe part of the reason this study found

more surfaces for treatment with magnification was that the examiners were not accustomed to using magnification. The conclusion is definitely needed in getting used to using magnifiers.

Baylor: Benefits: Magnification forces users to maintain ergonomic or balanced posture.

Problems: The weight of the loupes can be uncomfortable, especially at first. With time, this usually ceases to be a problem. Disorientation can occur particularly at first. Perspective can be lost and it may feel as if control is also lost. This problem usually dissipates. Starting with lower magnification and progressing to a higher power can be very helpful in dissipating disorientation..

OU: Use of magnification can affect restorative decision-making. A noticeable increase in the number of restorations scheduled to be replaced and carious lesions to be restored may occur because of the radical difference seen through magnifiers. Care must be made to temper this trend seen with the initial use of magnification.

Whitehead SA, Wilson NA. Restorative decision making behavior with magnification. Quintessence International 1992; 23(10):667-671.

UMS: Expense to students - Designs for Vision and Orascope Research Models. Clip on magnifiers are less expensive and seem to be less cumbersome. Example: Opticaid clip-on magnifiers; Optivisors are a little more cumbersome still less expensive and comfortable when worn for long periods.

TENN: Cost is the only genuine problem. However, cost can be significantly reduced by utilizing one company and standardizing the system. Additionally, student loan money is available for purchasing these systems if they are placed on the required instrument list versus recommended instruments.

Benefits include better visualization and better ergonomics if an appropriate magnification system is utilized. Eye strain is reduced and back problems caused by poor seating can be reduced. An excellent text which covers magnification and other aspects of ergonomics within the dental environment is "Ergonomics and the Dental Care Worker" by Denise Murphy (American Public Health Association, Washington, DC 1998)

V. **Regional CODE Agenda**
(please report on them)

UTH: One major stumbling block may be more of a cultural issue. Faculty who have not experienced "formal" evidence gathering and analysis, whether from basic *in vitro* studies or from clinical trials, often feel very uncomfortable with the scientific process and any subsequent outcomes. There is a reluctance by many to embrace knowledge arising from methods in which they have limited experience or understanding.

All practitioners make numerous decisions based on varying forms of evidence. Some, for whatever reason, base all of these decisions on personal experiences and foundational dental school routines. Conversely, with others, the existence of a

clear line of scientifically obtained evidence is paramount before any decision making process can develop. Relying on either exclusively may lead to indecision and/or inappropriate professional development, student education, and/or patient care. Critical thinking, critical analysis, creativity, imagination, and accurate decision making all stem from both personal experiences and from the scientific process.

Evidence-based education should integrate individual clinical expertise with the best available external clinical evidence from methodical, systematic scientific research. Neither alone is enough.

LSU: No problems. However, there is a recent article in ADEA journal asking the question “is there enough evidence” for many topics, and if not, what do you do?

- UTH-SA:**
1. Faculty will have to read journals.
 2. Faculty will have to understand research.
 3. Faculty will have to change their slides.
 4. Faculty will no longer be able to say to students, "It's right because I say it's right".
 5. Faculty will no longer be able to be picky on flat floors and preparation extension.
 6. Faculty will have to know what the preponderance of evidence shows.

The ethical and legal foundation for dental practice is referenced and compared to “the standard of care”. The standard of care will be continuously updated based on reliable and valid evidence based reports on every aspect of dental care. The analysis, communication, and application of this supportive data place new responsibilities on academics, organized dentistry, and the individual practitioner.

Baylor: The textbook we use (and any legitimate text) has many references at the end of each chapter, each reference as evidence that the content is based on research. There may be as many as 200 references per chapter. Since we use the text to teach, it must be said that we teach evidence-based concepts and materials.

The problem comes from the fact that many articles are published continually due to “publish or perish” concept. Many of these articles may be accurate and many may not be. We must be discriminate in using these materials for teaching purposes. It is too easy to get caught up in something, which sounds great, but may be a conclusion based on faulty research.

EVIDENCE-BASED APPROACH RULES OF EVIDENCE FOR EVALUATING REPORTS OF TREATMENT EFFICACY

Questions to ask when using an evidence-based approach to evaluate research literature and clinical data:

1. Are the results applicable to a particular patient?
2. Were the study patients randomly and properly assigned
3. Were all of the patients in the study followed up completely or was there an excessive dropout rate?
4. Were the study populations analyzed in their randomized groups?

5. How blinded was the study?
6. Except for the experimental intervention, were the groups treated equally?
7. Was the statistical analysis done properly?
8. Did the authors perform so many statistical tests that a mistake “significant” finding was found?
9. Did the article report on the participants’ compliance with the treatment?
10. Were all the clinically significant outcomes discussed?
11. Were the side effects and negative effects of the treatment reported and discussed?
12. Do the benefits of the treatment outweigh any potential negative effects and costs?

References:

- Dodes JE. The amalgam controversy. JADA 2001; 132: 348-56*
Guyatt GH, Rennie D. User’s guides to the medical literature. JAMA 1993;270(17):2096-7
Harndt E. Ergebnisse klinischer untersuchungen zur losung der amalgam-quechsilberfrage (Clinical examination results of research on the amalgam-mercury question). Deutsche Zahnarztliche Wochenschrift 1930; 33:564-75

OU:

The concept of evidence-based education and evidenced-based practice in dentistry is a very admirable one. Its goals are to identify the best practices based on scientific evidence, and make this information readily available to students and practitioners. The problems that may hinder the realization of converting this concept to a reality are numerous.

One concern that may worry many practitioners is that of creating guidelines or standards of care that are too stringent or restrictive. This could leave the clinician fewer treatment options to offer their patients in spite of the multitude of complex factors involved in the care of each individual case. Trial lawyers and third party insurers will certainly appreciate a list of standard treatments based on the “best evidence” to utilize on behalf of their client in court or to allow them to reject reimbursement for certain procedures. Practitioners could become so paranoid that they might choose a treatment that they did not feel was applicable to a certain situation simply to avoid being accused of not utilizing the “best evidence” standard of treatment.

Another problem that concerns many in relation to evidence based dentistry is the fact that there is not really a lot of sound research evidence on which to base many of our most established traditional practices. There is a shortage of actual randomized clinical trials to base our best evidence decisions on. The remaining evidence often comes from studies that are not readily comparable because of a lack of standardization of research methodology. Dental research is a must, but there must be more of it, it must be better funded, and be better organized before we can begin to develop an accurate collection of data that can provide information for systematic searches that could lead to sound evidence-based education and practice.

Another problem in establishing evidence-based dentistry is the fact that it is a very difficult and time-consuming process. The systematic search required to review just one facet of a clinical procedure requires a great deal of effort. It requires skill in literature search techniques and the ability to accurately evaluate the research methodology used in each study. A sound knowledge of statistical analysis is necessary to assure that a statistical analysis was performed properly for each study, and to also allow the reviewer to perform a meta-analysis of all of the

information gathered during the systematic review itself. There may be a shortage of qualified individuals who have the time and the skills to allow a timely review of all aspects of dental practice and continually update the reviews.

After saying all of this, we are definitely in favor of the concept of evidence based-education and the evidence-based practice of dentistry. It can have a very positive affect on the practice of dentistry as long as its limitations are recognized and its applications are kept in perspective.

UMS: One has to be careful not to base your entire dental education solely on an evidence-based approach. We think that a combination of evidence-based and experience-based approaches would create the best education. Care has to be taken not to get backed into a corner by practicing a new technique which only a few journal articles have supported. There must be multiple forms of evidence, such as: refereed articles; literature reviews, consensus statements, multiple independent sound clinical studies before adopting a new technique or product. Part of your background information should come from clinical practitioners who have repeatedly utilized a technique or product that has been successful in their hands for several years. The reason for this is that part of the art and science of operative dentistry is the "art" portion, which consists of the subjective aspect of dentistry, and may not be explained by science. The art of clinical experience or clinical wisdom referred to as anecdotal experience is founded on a "gut feeling" is difficult to describe and quantify because of the intricacies of the brain described further in Cruz's article in the Journal of the American College of Dentists. Perhaps the "best" evidence would be synthesis of both quality research generated information (basic and applied) along with experience-based evidence.

References:

1. Cruz, MA *Evidence based versus experienced based decision making in clinical dentistry. Journal of the American College of Dentists 67(2): 30-2 Summer 2000*
2. Laskin, DM *Finding the evidence for evidence-based dentistry. Journal of the American College of Dentists 67(1):7-10 Spring 2000.*

TENN: The primary concern with evidence-based dentistry is one of accuracy and consistency, particularly if it is going to be used as a benchmark for litigation. Controversy exists over the benefits of bench top studies as they pertain to clinical relevance. Clinical studies take years to complete, and are further complicated by the time in which it takes to have these studies published. On many occasions, by the time the research is published, the products that were evaluated may no longer be on the market or have been modified to such an extent that the research findings aren't relevant. Questions exist regarding methodology, statistical analysis and when do we have enough evidence to establish a material or technique as an accepted standard. Once that standard is established, what if clinically we find things don't work out as anticipated? The example that comes to mind is that of Gallium. Are the professionals who placed these restorations liable for them or not? Although having all decisions made on sound evidence based concepts would be ideal, clinical judgment is an important factor that should not be ruled out.

VII. **Suggestions for CODE.**

What can the organization do to improve its effectiveness?
No Comments from participants.

What is suggested to improve the Web site?
<http://netserv.unmc.edu/code/codeFrame.html>
No Comments from participants.

Other suggestions?
No Comments from participants.

CODE Region _III (South Midwest)_ Attendees Form

NAME	UNIVERSITY	PHONE #	FAX #	E-MAIL ADDRESS
Christine Beninger	Baylor/Texas A&M	214-828-8211	214-874-4544	cbeniger@tambcd.edu
John Burgess	LSU	504-282-5943	504-619-8549	Jburge@lsuhsc.edu
Stanton Cobb	Baylor/Texas A&M	214-828-8281	214-874-4544	scobb@tambcd.edu
James Fitchie	UMMC	601-984-6036	601-984-6039	jfitchie@sod.umsmed.edu
Terry Fruits	OU	405-271-5735	405-271-3423	terry-fruits@ouhsc.edu
Marvin Hirsh	Baylor/Texas A&M	214-828-8384	214-874-4544	mhirsh@tambcd.edu
Jerry Nicholson	UTexas-SA	210-567-3693	210-567-6354	nicholson@uthscsa.edu
Scott Phillips	UMMC	601-584-6042	601-984-6039	smphillips@dos.umsmed.edu
Aaron Puckett	UMMC	601-984-6170	601-984-6087	apuckett@sod.umsmed.edu
Gary Reeves	UMMC	601-984-6030	601-984-6039	Greeves@sod.umsmed.edu
Alan Ripps	LSU	504-619-8543	504-619-8549	aripps@lsuhsc.edu
James Slmon	UTenn	901-448-6647	901-448-7104	jfsimon@utmern.edu
Ned Turner	UTenn	901-448-6052	901-448-7104	nedturner@utmern.edu
Tate William	U Texas-Houston	713-500-4264	713-500-4100	wtate@mailidbiuth.tmc.edu

CODE REGIONAL MEETING REPORT FORM

REGION: IV (Great Lakes)

LOCATION AND DATE OF MEETING:

Case Western University Cleveland, OH

MEETING HELD - did not submit responses

CHAIRPERSON:

Name: T. Roma Jasonevicius

Phone #: (216) 368-2237

Address: Case Western University

Fax #: (216) 368-3204

10900 Euclid Avenue

E-mail: trj2@po.crwu.edu

Cleveland, OH 44106-4905

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name:

Phone #:

Address:

Fax #:

E-mail :

Date:

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC College of Dentistry;

40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290

Fax: 402 472-5290

E-mail:

lhaisch@unmc.edu

Also send the information on a disk and via e-mail with all attachments. Please indicate the software program and version utilized for your reports.

**SUMMARY OF RESPONSES TO NATIONAL AGENDA:
Region IV**

**2001 NATIONAL CODE AGENDA
REGION IV RESPONSES**

(Please cite the evidence were applicable)

CODE Region _IV (Great Lakes)_ Attendees Form

NAME	UNIVERSITY	PHONE #	FAX #	E-MAIL ADDRESS

CODE REGIONAL MEETING REPORT FORM

REGION: V (Northeast)

LOCATION AND DATE OF MEETING:

Columbia University New York, NY 10032

October 18-19, 2001

CHAIRPERSON:

Name: Dr. Richard Lichtenthal

Phone #: (212) 305-9898

Address: Columbia University

Fax #: (212) 305-8493

603 W 168th Street

E-mail : rml1@columbia.edu

New York, NY 10032

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

1. Minimally invasive restorations.
2. Caries Risk Assessment
3. Non Radiographic diagnostics (DiFoti, Kav0, etc.)
4. Recommendations to examining orgs.. Re; Simulation vs Live patient; size of acceptable lesion (too small?)

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: Dr. Richard Lichtenthal

Phone #: (212) 305-9898

Address: Columbia University

Fax #: (212) 305-8493

603 W 168th Street

E-mail : rml1@columbia.edu

New York, NY 10032

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC College of Dentistry;
40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290

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Also send the information on a disk and via e-mail with all attachments.
Please indicate the software program and version utilized for your reports.

**2001 NATIONAL CODE AGENDA
REGION 5 RESPONSES**

(Please cite the evidence were applicable)

I. Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)

Columbia: Preclinical and clinical training is competency linked to comprehensive care with some minimum requirements i.e. case completion, patient encounters, etc.

UMDNJ: The operative grade is based on requirements. Comprehensive care is a separate grade derived by GPA'S + Clinical Affairs.

Boston: Comprehensive care provided in a group setting (total 10 chair practice) – practice coordinator in charge of each group. Point value attached to each procedure – 1000 points in total.

UPenn: Curriculum competency based – eligibility for graduation. More experience in any discipline of clinical dentistry is also more competency. Experience base targets are not set in stone.

Temple; Comprehensive care is requirement, point system. In the 3rd year there is no comprehensive regulation, skill exam instead (base placement, class II.,III, etc.)

UConn: Curriculum competency based – eligibility for graduation. More experience “Experiential Credits” in any discipline of clinical dentistry is also more competency. School tracks the students’ accomplishment. The 4th year students must fulfill specified minimum unit prerequisites to be eligible to take Test Cases.

SUNY-SB: At each level of the education process students have multiple clinical competency exams, patients, manikin – requirement.

Maryland: 3rd year students assigned to six GP groups with their own cubiculum; simulation comprehensive exam; simulation also for the faculty standardizing.

Can there be or is there a combination of both - requirements and comprehensive care?

Columbia: Combination of both over the four years.

UMDNJ: The operative grade is based on requirements. Comprehensive care is a separate grade derived by GPA'S + Clinical Affairs.

- Tufts:** Comprehensive care and requirements should be combined.
- Boston:** Comprehensive care and requirements should be combined.
- SUNY-SB:** There is a number of procedures that a student must complete to be considered adequately experienced.
- UPenn:** Yes, students perform emergency care, treatment planning, prevention, oral health, periodontics, restorative (simple, complex) implant restorations, and post-treatment maintenance. Surgeries performed in more appropriate environment. The assignments are controlled by PCU leader screening for the most appropriate student for the new patient. The student is responsible for the comprehensive care. Experience basis for all disciplines are not concrete.
- UConn:** Tracking system of the clinical hours and work accomplished. Predetermined Experience Credit points assigned to each procedure. (Total Experience Credits + Total Hours = Experiential total). The 3rd year students are required to have 800 experience credits of which 500 must be from patient care. The credits are non-specific. Currently, there are three levels of evaluation: team, discipline and Academic promotions Committee; the first two report to the third one.

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

- UMDNJ:** Students have assigned their own cubicle and block of rotations of different disciplines. 3rd and 4th year students have their own operatory.
- NYU:** Students rotate on scheduled bases.
- Maryland:** 3rd year students share, 4th year students have their own operatory.
- McGill:** 3rd year students share, 4th year students have their own operatory.
- Howard:** Students schedule to the supervisor who is responsible for the case.
- Columbia:** Two students share a chair.
- Tufts:** Assigned chair.
- Temple:** Assigned chair.
- Boston:** Students do not have their own cubicle yet, the new clinic floor in process. 3rd and 4th year students will have their own chair.
- SUNY-SB:** Seniors have their own cubical. They do not go to discipline clinics. Specialists may be called in and cases may be referred.

- UConn:** Students do not have their own cubical but they are assigned to one of three teams. Faculty team leader of each group screen and assign patients according to the students' load and needs. They treat the patient adults in these team settings providing the Operative, Prosthodontic, Endodontic and Periodontic care. Each patient has primary and primary provider, 4th and 3rd year student. Students rotate in some disciplines such as Pediatrics and Oral Surgery.
- UPenn:** Assigned cubical for restorative dentistry. The main clinic offers the comprehensive care. Seniors meet 6-7 sessions per week. The juniors meet 4-5 sessions per week. The patients follow the student to a discipline-specific clinic for endodontics, periodontics and admission clinic for separate rotations. Hygienists in each group seeing patients of that group (recall or new patients).

What is your method for determining and maintaining competency?
 Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.

- SUNY-SB:** Combination of daily faculty anecdotal notes, completion of minimal requirements and multiple competency examinations.
- UMDNJ:** Clinical manual for various competencies, required passing grade and number taken.
- Temple:** Combination of requirements and comprehensive care. Completion in the years (the end of 4th year), skill exam. Point system evaluating different steps of the procedure.
- Columbia:** Quarterly evaluations by group leaders, multiple simulated and clinical examinations, written - case based examinations and case completion with outcomes assessment
- McGill:** 3rd and 4th year competency exam.
- UConn:** In the 4th year students challenge five Operative Dentistry cases: Caries Risk in treatment Planning Context; Class II resin Composite; Class V Cervical Facial; Class III or IV Anterior Resin Composite; Class II Amalgam. There are "competency evaluation criteria" for each test case. There are no tests in the 3rd year in Operative, the rationale being that it does not make sense to test for competency until students have been given adequate opportunity to gain experience.
- UPenn:** Three kinds of competencies. First – clinical competencies (amalgam, composite resin) corresponding to the NERBs. Also grading system used the same. Patient management, record keeping, infection control also included. Second – evaluated by the competency progression form over the period of two years by PCU leader with other faculty. Third – Operative Simulated Clinical Examination (OSCE) on the manikin in the senior year. Purpose is to do the idea preparation and restoration and prepare for the NERBs. Combining three types of competencies – good picture of level of competency. _

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

Columbia: Laboratory and clinical simulated exams in operative (DentSim), prosthodontics and endodontics, second, third and fourth years.

UPenn: Operative Simulated Clinical Examination (OSCE) in Operative Dentistry, endodontics and crown and bridge.

McGill: Non-patient competency exam does not exist yet.

UConn: Non-patient competency exam does not exist yet.

UMDNJ: Non-patient competency exam does not exist yet.

Boston: Non-patient competency exam does not exist yet.

Maryland: Simulation system used for calibration. Practical exams are called not pre-clinical but clinical ones.

SUNY-SB: In Operative Dentistry in initiation.

Temple: Simulation used for faculty calibration.

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

Columbia: Students do all lab work in preclinic. All lab work in clinic - until - certified competent by supervising faculty. The they can send that case or part of case to the lab. Full gold crowns and/or gold onlays are done entirely by student.

UConn: Students pour, Pindex, and mount models. The laboratory does the rest. If students desire to learn skills in laboratory, they can do lab work under the guidance of the lab technicians; most students do not. Students set denture teeth. Partial frameworks are sent out.

UPenn : Students make their diagnostic wax ups, ditch their own dies, and possibly pattern resin copings, but everything else is sent to a commercial laboratory for fixed. For removable, students do all of their own lab work with the exception of final processing and casting frameworks.

UMDNJ : Depends on type work, complexity of the case, time schedule if the case is all sent out or not. Veneers are all sent out.

Boston: No lab work is done by students. They make only models, mount and ditch dies. Resident lab technician help them with clinical adjustments etc. Removable lab in house.

SUNY-SB: Students pour, trim and mount all cases. In house laboratory completes all other procedures. Dentures except frameworks are processed by students.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or “soft start” curing (stepping, ramping, pulsing)?

Columbia : Using conventional curing lights. High energy systems described in seminars and lab (esthetic dentistry) not available in predoctoral clinic. Available in postdoc aegd program.

Tufts: Only lecturing (time 20-40 sec).

Boston: Using standard lights, “ramp” light available on choice bases.

SUNY-SB: Only lecturing (time 20-40 sec).

UMDNJ: Using a high intensity light. Lecturing different types.

UPenn: Conventional curing used in the Main Clinic. The other curing techniques are lectured in the 3rd year.

UConn: A lecture, “Visible Light Curing and Maintenance of VCL Units” given in the 3rd year. “New Directions in Light Curing” part of this lecture. Using conventional lights only

What evidence are you using to support the utilization (if doing so) of this curing approach vs the conventional method?

Boston None.

SUNY-SB None.

UMDNJ None.

UConn None.

Columbia None.

UPenn Currently using Robertson et al., Sturdevant’s Art and Science of Operative Dentistry.

IV. Magnifiers

Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers? Please identify type.

UConn No magnifiers are required. The school makes vendors available to students so that they can see the products. Many of the students purchase magnifiers, usually the telescopic type.

Columbia Not required, but, about 30% buy them in second year and ultimately use them clinically

UMDNJ Not required.

SUNY-SB Not required.

Boston Yes, required. The manufacturer is optional.

UPenn Not required yet, but thinking about implementing.

If not used, is a certain level or quality required? Please indicate.

UPenn Everyone is held to the same criteria.

Boston None.

UMDNJ None.

UConn None.

NYU None.

Columbia None.

Which year(s) and in which disciplines are they being utilized?

UConn By observation, students seem to purchase magnification in the second year.

Columbia Second, third, fourth years operative, pros and endo

UPenn Currently, not applicable.

- Boston** Operative, Endodontics, Fixed Prosthodontics, All per-clinical and clinical courses.
- NYU** Operative, Endodontics, Fixed Prosthodontics, All per-clinical and clinical courses.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

	preclinical labs	clinic	Addtl notes
Columbia	50%	50%	No comments
UConn	83%	71%	No comments
Boston	80%	60%	No comments
UPenn	20%	20%	No comments
SUNY-SB	50%	50%	No comments
UMDNJ	20%	40%	No comments

Please list references on benefits or problems with the use of magnification.

Columbia See references below

UConn *British D J 185 (10):504-508, 1998. J Canadian D A 61(10):851-856, 1995. J Canadian D A 20(11):25-32, 1992. J Dentistry 27:197-502, 1997. J Dent Ed 62(11):905-910, 1998. J Oral Rehab 28(4):309-313.*

Boston O-Scopics, assembly not strong

List other benefits or problems seen/perceived with magnification.

Columbia Detail of restorations is more easily visualized; requirement for esthetic dentistry; heavy, expensive, become too dependent.

UPenn Concerned about dependence.

UConn Benefits: improved vision for detail, improved posture in order to meet focal length needs. Problems: cost, dependence – need two pair in case one breaks, eye and neck fatigue if not properly aligned, limited depth of field, decrease of light transmission efficiency due to reflections, loss of alignment with adjustable loupes, adjustment to use, bringing instruments into field of vision.

V. **Regional CODE Agenda**
(please report on them)

Questions posed by Columbia University:

Pulp capping indirect and direct.

NYU, Columbia, Upenn, Howard, Uconn Not using direct method only in case of the frank exposure; reason: insufficient monitoring system, need of the endo-department. In clinic used only indirect pulp capping Calcium Hydroxide and Fuji 9 for temporizing the cavity. Removal of all caries 5-6 weeks later.

Maryland Using Indirect pulp capping in reversible cases (not in a bridge unit, immune-compromised patient) with a four-week monitoring (X-ray). Only in a good recall monitoring situation – six full time hygienists. Temporizing Fuji 9.

Caries indicators.

Columbia Teaches their availability and use. Not available in clinic- prefer excavation and development of "feel" for caries.

SUNY-SB Does not teach, not available in clinic.

UPenn Does not teach, not available in clinic.

Howard Available in clinic only.

McGill Available in clinic only.

Maryland Available in clinic only.

All school awareness, preference in excavation with a sharp instruments.

Cariology and remineralization, is there a written protocol.

Caries risk assessment.

Most schools have or are developing a written protocol for caries risk assessment. (i.e. CI II. proximal surface caries only in enamel, not reached DEJ – not examine with the sharp explorer. Fluoride treatment, consideration of the oral hygiene. Individual treatment.)

Amalgam as a restorative material. Should we eliminate the conservative NERB type Class II restoration for amalgam and only use composite?

Columbia Individual cases, teaching foundation principles of amalgam and composite. Use dependent on individual case. Will continue to teach both (as well as gold) regardless of NERB requirements.

**Howard
UMDNJ,
Temple,
Upenn,
McGill** Teaching with or without NERBs requirement.

Boston Preference in posterior composite in cases with indication.

Dental Anatomy – what kind of program is presented (numbers of hours lecture, in lab)

Howard First semester

SUNY-SB 98 hours

Boston DAO in the 1st semester, only lectures, no laboratory; Occlusion in the 3rd year.

Columbia Course originally 7 months now 4 months continuing into prosthodontics. Laboratory and lectures. Columbia - 70 hrs lab, 20 hours lecture, CD + text +syllabus

UPenn Only lectures, no laboratory.

McGill 40 hours.

Temple DAO and Occlusion are not separate courses but combined.

NYU DAO course no longer but Foundation Course; lectures in simulation laboratory only (60 hours of lab-work, 20 hours of lectures).

Are you still grading students with letter grades or are you just using competencies?

SUNY-SB Evaluation grades.

NYU Grading system 1-4.

Howard Pre-clinical and clinical courses - grading system alphabetical (A,B,C,D)

Temple Pre-clinical and clinical courses - grading system alphabetical (A,B,C,D)

Columbia	Pre-clinical and clinical courses evaluated alphabetically (A,B,C,F), some grading numerical in didactic courses. Mostly competencies and case completion in clinical restoratiived.
UPenn	Pre-clinical and clinical courses evaluated alphabetically (A,B,C,F), some grading numerical in didactic courses. Mostly competencies and case completion in clinical restoratiived.
Boston	Pre-clinical courses evaluated alphabetically (A,B,C,D); clinical courses have numerical system of evaluation (points).
McGill	Pre-clinical courses evaluated alphabetically (A,B,C,D); clinical courses system pass/fail.
Uconn	Pre-clinical and clinical courses evaluated pass/fail system.
NYU	New system of competency, no daily grades, on transcript alphabetical grades.

VI. National CODE Meeting

A National CODE meeting will be held Thursday, February 21,2002 4:15-6:00PM at the Fairmont Hotel in Chicago, Illinois. This is in conjunction with the annual meeting of the Academy of Operative Dentistry. Please submit 1-2 items for consideration for the 'agenda' of the National Meeting. Suggestions as to how to make this brief meeting productive and efficient are needed.

1. Stand on National licensure – from clinical to simulated exam with the change of the simulated criteria.
2. Is Operative Dentistry more then drilling and filling; how are we educating students to manage caries?

VII. Suggestions for CODE.

What can the organization do to improve its effectiveness?

Construct National Agenda to allow for tabulation and concise summary of written responses from each school.

What is suggested to improve the Web site?
<http://netserv.unmc.edu/code/codeFrame.html>

- Job offerings
- Statement of **purpose** for the organization – mission.
- **History** (how the organization formed, what has accomplished, future plans).
- **Organization:**
- National and regional directors, advisory committee, volunteers, election, etc.
- Funding – dues, industrial support.
- Framework for meeting, its mission – e.g., national annual agenda formulation, regional meetings, regional and national reports, national meeting in Chicago.
- Establish a URL in name of the organization for 35\$ or less per year and host on a university or other gratis server.

Other suggestions?

No Comments

CODE Region V (Northeast) Attendees Form

George Keleher	Boston	617-638-4682	617-638-5744	gkeleher@bu.edu
Joanne Baker	Columbia	914-723-9106	914-723-9108	jbaker1628@aol.com
Greg Bunza	Columbia	212-305-8616	212-305-8493	gnb3@columbia.edu
Farhad Hadavi	Columbia	212-305-4847	212-305-8493	fh27@columbia.edu
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Andrea Jackson	Howard	202-806-0389	202-803-0354	adjackson@howard.edu
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James Kaim	NYU	212-998-9720	212-995-4867	jmk2@nyu.edu
Mark Wolff	SUNY-SB	631-632-8937	631-632-3001	mark.wolff@stonybrook.edu
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Iqbal Singh	Tufts	617-636-6787	617-636-6583	igbal.singh@tufts.edu
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Kenson Noel	UMDNJ	609-645-5814		kennoel@hotmail.com
David Netwitter	UConn	860-679-3749	860-679-1370	newitter@nso2.uchc.edu
Joy Bockstein Abt	Upenn	215-898-0961		bockstej@pobox.upenn.edu

CODE REGIONAL MEETING REPORT FORM

REGION: VI (Southwest)

LOCATION AND DATE OF MEETING:

University of Kentucky College of Dentistry Lexington, KY

October 24-26, 2002

CHAIRPERSON:

Name: Paul Osborne

Phone #: (606) 257-2147

Address: UKCD

Fax #: (606) 257-1847

800 Rose Street

E-mail: pbosb02@uky.edu

Lexington, KY 40536-0084

List of Attendees: Please complete the CODE Regional Attendees Form (enclosed at end of Agenda)

Suggested Agenda Items for Next Year:

1. Describe the way that your school prepares students for National Boards.
2. Teaching restoration repair in your curriculum.
3. What salaries, benefits, etc. do you provide for part-time faculty?
4. List five areas in Operative Dentistry that should receive top priority in research.

LOCATION & DATE OF NEXT REGIONAL MEETING:

Name: Dr. Abby Brodie

Phone #: (954) 262-7342

Address: Nova Southeastern University

Fax #: (954) 262-1782

3200 S University

E-mail: abrodie@nova.edu

Ft. Lauderdale, FL 33328

Date: TBA

Please return all completed enclosures to Dr. Larry D. Haisch, National Director, UNMC College of Dentistry;
40th and Holdrege Streets; Lincoln, NE 68583-0750.

Deadline for return: 30 Days post-meeting

Office: 402 472-1290

Fax: 402 472-5290

E-mail:

lhaisch@unmc.edu

Also send the information on a disk and via e-mail with all attachments.

Please indicate the software program and version utilized for your reports.

**2001 NATIONAL CODE AGENDA
REGION 6 RESPONSES**
(Please cite the evidence were applicable)

I. Requirements vs. Comprehensive Care

How is your college/school handling this as the curriculum is supposed to be competency based?
(Eligibility for graduation is linked to competency.)

UFL: A list of competency procedures for each semester is given to the students and a certain number of competency procedures from this list are required for each semester. The required competencies gradually become more difficult each semester. Two faculty members check the competency procedure and a consensus grade (between the 2 faculty) is given. Along with competency requirements, daily procedures are counted and factored into the semester grades. No daily grades are given for non-competency procedures.

MCG:

- 1). Behavioral objectives for restorative courses have been changed to contain language consistent with competency-based evaluation philosophies.
- 2). Clinical course grades are partially based on competency examinations (50%).
- 3). Students must pass competency examinations in order to pass certain clinical courses.

UKY: Our model is based on comprehensive care without completely rigid requirements. Currently building clinical competencies into our system.

ULouis: The University of Louisville has divided its Junior and Senior classes into six Comprehensive Care Clinics (3 for the Juniors, 3 for the Seniors). The various disciplines have developed competency examinations that must be successfully completed before a student is recommended for graduation. There are Essential Experiences that a student must complete prior to challenging a competency examination. There are no other numerical requirements that must be completed prior to graduation.

Meharry: The curriculum is competency based. However, in reality students have to gain specific clinical experiences based on their class status. This involves the transfer of patients between students to gain such experiences. It is not necessary to attain a certain number of requirements, but clinical experiences are required. Students must pass a Final Clinical Competency Exam to graduate.

MUSC: Requirements: Sufficient “points”
Successful completion of a clinical competency examination for Class II Amalgam, Class III Composite, and Class IV Composite (may use Class II Composite or diastema closure for this)

Comprehensive care: Students are expected to perform and complete all treatment required by the patients assigned to them.

UNC: In Operative, students must achieve a certain number of points.

NOVA: The curriculum is competency based. D-3 students have clinical requirements and clinical competency exams. D-4 students have comprehensive care and clinical competency exams. Competency exams must be passed, and comprehensive care carried out in order to pass the clinical course, and subsequently be eligible for graduation.

UVA: We have numerical, attendance, and competency requirements (a requirement is passing all competencies). Competency requirements in general practice was completion of 10 operative competencies however we are changing to a mock board and critical thinking type competency.

Can there be or is there a combination of both - requirements and comprehensive care?

UFL: Yes.

MCG: Yes. The students are expected to experience a certain quantity of minimal essential experiences before they are deemed to be independently competent. Competency Exam eligibility should be based on a prerequisite minimal number of closely supervised experiences. The number of direct restorative procedures they need to have before graduation is 100.

UKY: Yes

ULouis: Essential experiences could be interpreted as being requirements. However, we no longer require a specific number of amalgams, composite resin restorations, etc. prior to graduation. We do believe that a student should have some clinical experience prior to attempting a competency examination.

Meharry: Yes

MUSC: Yes, we do it. (see #1 above). Expected points are achieved as a result of comprehensive patient treatment performed according to a sequenced comprehensive treatment plan.

UNC: Yes, we use a point system that combines quality with quantity.

NOVA: Yes, as indicated above.

UVA: Our general practice department has requirements. Each procedure is given a set number of points. Students must complete a certain number of points in order to pass the course. There are no specific number of procedures. This encourages students to see patients because they are not worried about doing a required # of procedures. Students are not assigned new patients until their active patients are completed. We strive for comprehensive care but recognize that students sometimes “borrow” patients for single procedures or competencies and patients maybe transferred from one student to another for larger requirement issues such as prosthodontic cases or periodontal cases

Do students have their own assigned cubical, go to a discipline specific clinic based on the treatment needs of the patient or are assigned to a block rotation?

UFL: Students go to a discipline-specific clinics based on treatment needs. *i.e.*, Operative, Prosthetics, Periodontics, Oral Surgery, Endodontics, Diagnosis and Treatment Planning.

MCG: The students do not have their own cubicle in the restorative clinic. They have to sign up on the computer to reserve a chair. After they reserve a cubicle, an encounter form (fee ticket) is generated and appropriate instrument trays will be issued according to the indicated procedure. They have a block rotation experience in the following disciplines- Oral Diagnosis, Oral Surgery, Endodontics and Pediatric Dentistry. Sophomore Operative Dentistry is part of a block experience in Oral Diagnosis.

UKY: Students have assigned cubicles.

ULouis: The University of Louisville has a combination of the above. There are more students (20-29) assigned to each of the Comprehensive Care Clinics than available chairs (18-24). Hence, there are rotations (Pediatric Dentistry, Oral Surgery, Emergency Clinic, etc.) by necessity. There are discipline-specific clinics in Endodontics, Periodontics, Oral Surgery, Orthodontics, Pediatric Dentistry. All orthodontics, periodontal surgery, and pediatric dentistry are performed in discipline-specific clinics. Simple oral surgery and endodontics are performed in the CC Clinics.

Meharry: Discipline-specific clinics - Oral Diagnostic Sciences, Oral Surgery, and Pedodontic Clinics. All use some form of block rotation.

MUSC: Junior Year: Assigned to block rotations. Take their assigned comprehensive care patients to their clinic block according to patient's treatment plan.
Senior Year: Students not scheduled in blocks. Sign up for clinic area according to patient's treatment needs.

UNC: No.

NOVA: Students are assigned their own group and usually occupy the same cubicle. Most treatment is done in this area of the predoctoral student clinic (such as endo, uncomplicated oral surgery procedures, perio, minor orthodontics, etc.). Students also go to assigned rotations in various predoctoral, off-campus sites, and post-graduate clinics.

UVA: Discipline-specific clinic. Random seating of student within each clinic.

What is your method for determining and maintaining competency?
Note: The 1999 Agenda asked "How is competency based operative evaluation determined?" This is an evolving area of experiences. Please respond accordingly for 2001.

UFL: A certain number and procedure type of competencies are required per semester. A student must have done the same procedure once on a patient before presenting to do a competency. Two faculty grade the procedure.

MCG: We have both Group and Individual Competency Exams for the Junior and Senior clinical restorative courses.
Group Competency Exams account for 30% of the grade, Individual Competency Exams account for 20% of the grade.

Group Competency Exams

(Whole class tests on a specified date, triple blind grading, 1 per semester)

- I. Class II Amalgam
- II. Class III / IV Composite
- III. Cast Gold procedure
- IV. Mock Boards

Individual Competency Exams

(Individual students choose the date, double consensus grading, 2 per semester)

- I. Rubber Dam Application
- II. Class I Amalgam
- III. Class II Cusp Replacement Amalgam
- IV. Provisional Crown
- V. Class II Composite Crown Impression

UKY:

- I. Preclinical competencies: Course Directors evaluate all procedures accomplished.
- II. Clinical competencies: some still being developed
- III. Clinical Course Directors review critical incidents that demonstrate a lack of competency.

- ULouis:** All Discipline Coordinators have established competency examinations that the student must successfully complete prior to graduation. Each of the CC Clinics is managed by a Group Manager who becomes well acquainted with his/her students. If the competency of a student is questioned, that student may be asked to perform some form of remediation. Daily treatment is also evaluated as part of the Clinical Patient Management course. Composites of these evaluations are delivered to the Group Managers via spreadsheets. If grades are trending downward, this will be noticed by the Group Manager and remediation may be initiated.
- Meharry:** FCCE and Practical Examinations.
The department reviews evaluation techniques, forms and faculty calibration on a regular basis. This includes changing grading forms and re-calibration of faculty.
- MUSC:** Preclinical: Exams and laboratory practicals
Clinical: Clinical competency exams as previously described. Daily clinical evaluations.
- UNC:** 1-Faculty assessment (competency evaluation)
2-Point system (determines individual competency status)
- NOVA:** Preclinical courses (D-1, D-2) – laboratory projects (typodont and natural tooth exercises), laboratory exams, written exams, remediation when applicable.
Clinic (D-2, D-3, D-4) – Evaluations by group leaders every 8 weeks, Clinical Competency exams, remediation when applicable, D-4 National Board Part II review course, NB II Mock board, D-4 Clinical regional board review course, Mock Board.
- UVA:** In the past this was handled by students completing a specific number of patient competencies (10). Currently we utilize mannequins for competencies in a “mock board” type competency and faculty evaluations.

Do you have non-patient competency exams? What, where, when? Are you comfortable in utilizing your present methods in the decision to rate a student competent? Please elaborate.

- UFL:** We give mock board exams which are competency based (part of the exam includes preparations and restoration on dentoforms and the endodontic portion is done on extracted teeth). Mock board exams are given in the fall semester of students' junior year and January of their senior year. Grades are given for the mock boards and a passing grade is required.
- MCG:** Not in Operative Dentistry after the preclinical courses. We do have a non-patient competency exam in Removable Prosthodontics.
- UKY:** Yes. Second year clinical competency.

ULouis: Yes. Orthodontics utilizes a dentoform for their competency evaluation for uniformity. This occurs in the senior year in the Simulation Clinic. The faculty is comfortable in utilizing present methods. Evaluators are calibrated and only specified faculty may evaluate competency examinations. Our performance on regional boards has served to validate the competency of the students upon graduation. I understand that our pass rate on the most recent regional exam was one of the highest if not the highest.

Meharry: Yes- Manikin Inlay Preparation and Restoration as part of the senior FCCE. Dr.Y. Anthony-Williams presented a paper in Chicago, IL March 2001, that verified an overall improvement in student performance on licensure exams during the past several years, since the adoption of FCCE format - paralleling regional licensure boards - SERTA and NERB.

MUSC: Non-patient competency exam only for pre-clinical students. Laboratory practical format but designed as a competency prior to entering the clinic. Yes; comfortable with non-patient pre-clinical and patient-oriented clinical competency testing.

UNC: No

NOVA: All direct restorations are done as patient competency examinations in the D-3 and D-4 years. The Fixed Prosthodontics course director oversees the single crown clinical (patient) competency exams and typodont fixed partial denture competency examinations. Consideration could be given to the proportion of time spent daily in patient care versus the time spent on a one time exam and adjust the weighting accordingly.

UVA: Seniors have a 1-day operative mock board mannequin exercise with blind examiners. We are incorporating this type competency in the junior year in 2001. This should give a good indication of a student's ability. Grades seem to more accurate because blind examiners do not know the operator. This is a new concept instituted the Fall 2001

II. Laboratory Support for Indirect Single Unit Restorative Treatment by Students.

What is the extent of student lab work? None, models only, X# of units completed before they can send the cases to the lab (in-house, commercial), they must do all their own lab work.

UFL: Pour impressions, mount models if required, trim dies, and then send to the laboratory.

MCG: The students are required to generate their own models and removable die system only. Laboratory work is primarily performed by our in-house laboratory. Very few cases, e.g., porcelain veneers or all-ceramic crowns are done by commercial labs.

- UKY:** Impressions are disinfected, mounted, and poured/trimmed. Cases are accomplished in-house generally (commercial lab if overloaded).
- ULouis:** Fixed Prosthodontics: Students prepare the models for all cases. They must fabricate one single crown. Subsequent crowns and FPDs may be sent to commercial labs.
Removable: Students construct final models, custom impression trays, occlusion rims. Setting of denture teeth and final processing is done commercially.
- Meharry:** Students do all of their own gold units. Partial, full dentures, PFM Crowns and FPDs are sent out to independent labs.
- MUSC:** Lab work is minimal in Operative. We send it all out to a commercial laboratory.
- UNC:** For single units, students have to do at least one metallic restoration with pros in a pre-clinical course. In the clinics, students are responsible for preparing the models and trimming the dies before turning the cases in to the in-house laboratory.
- NOVA:** Fixed Pros- Single PFM crowns – students are responsible for pouring models, separating and trimming dies, mounting casts on semi-adjustable articulators before being sent to the lab. For full cast crown, gold inlays, onlays, and cast gold post and cores, the student carries out all steps.
- UVA:**
- a) in-house lab pours and indexes master cast
 - b) student is responsible for trimming and marking dies and mounting case
 - c) in-house or commercial lab completes fabrication.

III. Curing Light Techniques

How are the newer curing light approaches being taught/utilized such as high energy systems (plasma arc, laser) or “soft start” curing (stepping, ramping, pulsing)?

- UFL:** Only given as information in lecture format.
- MCG:** The newer concepts are covered in lecture and with hands-on laboratory experiences in Dental Material Laboratory Courses and Senior Restorative Seminars. The lab on photo curing addresses many of the issues about curing (temp. rise, loss of intensity with depth, output spectral distribution, ambient light curing, etc.). The photo-curing lab is a 2 h hands-on experience for the students with an additional hour before lab. We also give students other lectures on the principles of composite matrix polymerization, composite composition, and physical properties. In the clinic, our light curing units are mainly Optilux and Spectrum models. We teach incremental curing of no more than 2 mm of composites for at least 20 sec for Esthet-X (Dentsply) and 40 sec for Prodigy (Kerr).

- UKY:** Didactically only.
- ULouis:** We teach a soft start (Elipar curing lights).
- Meharry:** Quartz Tungsten Halogen (QTH) being used. Students are told of other units - Plasma, Arc, Laser, Lighting Emitting Diode (LED), 20 Sec. Curing each increment- post cure.
- MUSC:** We teach the different concepts of light polymerization didactically. Clinically we use halogen lights and incremental placement technique.
- UNC:** Since research has not been conclusive in this area, students are being taught what we believe is still the best way to cure a composite incrementally with a halogen curing unit.
- NOVA:** Conventional curing lights are utilized in the preclinic and clinic. Didactic information is given in lecture format.
- UVA:** Lecture only at this time.

What evidence are you using to support the utilization (if doing so) of this curing approach vs the conventional method?

- UFL:** We are using the conventional method.
- MCG:** As above. We are teaching the conventional method of incremental light curing in the clinic although the students are exposed to the new ideas. We feel that there is still no conclusive evidence to prove that the newer concepts produce superior restorations. We are involved in research with almost every major manufacturer of light curing units. We are privy to confidential data that cannot be revealed. Suffice it to say that no new system offers a significant advantage over conventional methods.

Caughman WF. Chan DC. Rueggeberg FA. Curing potential of dual-polymerizable resin cements in simulated clinical situations. Journal of Prosthetic Dentistry. 85(5):479-84, 2001 May.

Bouschlicher MR. Rueggeberg FA. Boyer DB. Effect of stepped light intensity on polymerization force and conversion in a photoactivated composite. Journal of Esthetic Dentistry. 12(1):23-32, 2000.

Curtis JW Jr. Rueggeberg FA. Lee AJ. Curing efficiency of the Turbo Tip. General Dentistry. 43(5):428-33, 1995 Sep-Oct.

Caughman WF. Rueggeberg FA. Curtis JW Jr. Clinical guidelines for photocuring restorative resins. Journal of the American Dental Association. 126(9):1280-2, 1284, 1286, 1995 Sep.

Rueggeberg FA. Caughman WF. Curtis JW Jr. Effect of light intensity and exposure duration on cure of resin composite. Operative Dentistry. 19(1):26-32, 1994 Jan-Feb.

- UKY:** Still using conventional curing.
- ULouis:** Although literature can be found to support almost any method, several studies show advantages to the dual curing method with no disadvantages (except time).
- Yoshikawa, T. / Burrow, M.F. / Tagami, J. A light curing method for improving marginal sealing and cavity wall adaptation of resin composite restorations. Dental Materials, Jul 2001*
- Hannig, M. / Bott, B. In-vitro pulp chamber temperature rise during composite resin polymerization with various light-curing sources. Dental Materials, Jul 1999*
- Asmussen E, Peutzfeldt A. Influence of pulse-delay curing on softening of polymer structures. J Dent Res. 2001 Jun;80(6):1570-3.*
- Millar BJ, Nicholson JW. Effect of curing with a plasma light on the properties of polymerizable dental restorative materials. J Oral Rehabil. 2001 Jun;28(6):549-52.*
- Stahl F, Ashworth SH, Jandt KD, Mills RW. Light-emitting diode (LED) polymerization of dental composites:flexural properties and polymerization potential.Biomat.2000;21(13):1379-85.*
- Kanca J 3rd, Suh BI. Pulse activation: reducing resin-based composite contraction stresses at the enamel cavosurface margins. Am J Dent. 1999 Jun;12(3):107-12.*
- Fleming MG, Maillet WA. Photopolymerization of composite resin using the argon laser. J Can Dent Assoc. 1999 Sep;65(8):447-50. Review.*
- Burgess JO, DeGoes M, Walker R, Ripps AH. An evaluation of four light-curing units comparing soft and hard curing. Pract Periodontics Aesthet Dent. 1999 Jan-Feb;11(1):125-32.*
- Meharry:** We use the conventional curing units (QTH).
- MUSC:** Not applicable, since we are using the “conventional method.”
- UNC:** We use and teach only the conventional method.
- NOVA:** No response.
- UVA:** Not applicable.

IV. **Magnifiers**

Does your school require students to have magnification?
If so, are they required to have the same specific magnifiers? Please identify type.

- UFL:** No, students are encouraged to develop eye-hand coordination along with proper sitting and delivery practices before purchasing magnification; however, if students prefer to purchase magnification from the beginning of school, this is allowed. They are encouraged to try different types before purchasing.
- MCG:** The Department of Oral Rehabilitation strongly recommends that the students purchase their own magnifiers. However, it is not a requirement. There are several companies that cater to their needs, namely Designs for Vision and Orasoptic. Most students like the 2.5X power.
- UKY:** Not required, however many students use magnification.
- ULouis:** No
- Meharry:** No, although several students and faculty do use 2+ loupes.
- MUSC:** No requirement, but the use of magnification is encouraged. Students may purchase magnifiers at the clinic dispensary (1.75, 2.0, 2.5 magnification available)
- UNC:** It is not required, but recommended. Students use several different types.
- NOVA:** No, students are not required to have magnification.
- UVA:** Not required but recommended. 2-2.5 magnification
Considering it a requirement for freshman

If not used, is a certain level or quality required? Please indicate.

- UFL:** Same level of quality is expected by students who use or don't use magnification.
- MCG:** Same standards apply.
- UKY:** Same standards of care with or without magnification.
- ULouis:** No response.
- Meharry:** No.
- MUSC:** Same standards of care.
- UNC:** Students without loupes have the same requirements as students with loupes.

NOVA: Same level of quality if expected with or without the use of magnification.

UVA: Same standards.

Which year(s) and in which disciplines are they being utilized?

UFL: The students can start using magnification as soon as they decide for themselves when to use it.

MCG: We encourage the students to get used to magnification starting with Freshman Operative Dentistry. From then on, they continue to utilize it all through their clinical courses.

UKY: All years.

ULouis: Students that purchase magnification have used it in freshmen pre-clinic courses all the way through the senior year in the CC Clinics.

Meharry: Junior and Senior Year Clinics – some faculty use loupes for pre-clinical (2nd year) evaluation.

MUSC: Some use them anytime they are treating a patient and some use them in lab exercises.

UNC: Not required.

NOVA: Students using magnification start at various times, but usually not before the D-1, 2nd semester.

UVA: Freshman through senior in operative, prosthodontics, endo etc.

What percentage of faculty teaching operative dentistry utilize magnification in preclinical laboratories _____% and the clinic _____%?

	preclinical labs	clinic	Addtl notes
UFL	63%	63%	No Comments
MCG	100%	100%	No Comments
UKY	80%	90%	No Comments
ULouis	00%	00%	No Comments
Meharry	50%	50%	No Comments
MUSC	100%	90%	No Comments
UNC	100%	100%	No Comments
NOVA	30-40%	30-40%	No Comments
UVA	50%	70%	No Comments

Please list references on benefits or problems with the use of magnification.

ULouis: *Forgie, AH, Pine CM, Pitts NB. Restoration removal with and without the aid of magnification. J Oral Rehabil. 2001 Apr;28(4):309-13.*

- MCG:**
- 1.) *A.H. Forgie. Magnification:What is Available, and will it Aid your Clinical Practice. Dent Update 2001; 28:125-130*
 - 2.) *A.H. Forgie, C.M. Pine & N.B. Pitts. Restoration Removal With And Without The Aid Of Magnification. J of Oral Rehabilitation. 2001; 28:309-313*
 - 3.) *S. Caplan. Magnification in Dentistry. J Esthetic Dent 1990; 2:17-21*
 - 4.) *S.A. Whitehead, N.H.F. Wilson. Restorative Decision-Making Behavior With Magnification. Quint Int 1992; 23:667-671*

Meharry: *The Art and Science of Operative Dentistry, Sturdevant 4th Edition. P. 434.*

MUSC: *Fundamentals of Operative Dentistry, 2nd Ed., Summitt et al., 45-6. Christensen GJ. Magnification. Clin Res Assoc Newsletter, 1990; 14(10):1. Sheets CG, Paquette JM. The Magic of Magnification. Dent Today 1998;17(12):60-3,65-7*

UNC: Benefits: better visualization; Problems: price and infection control.

List other benefits or problems seen/perceived with magnification.

UFL: Faculty who can't see well with normal prescription glasses are benefited by using magnification. Problems could be: 1) development of poor habits before acquiring sufficient experience in eye-hand coordination and proper delivery techniques - i.e. proper posture, chair position, etc. 2) purchase of expensive magnification before really being able to know which may be best for the individual student.

MCG: Benefits:
Higher quality of work
Better interpretation of radiographs and margins of restorations
Improved posture

Perceived Problems
Eye and muscle fatigue
Higher magnification yields a smaller field of vision
Cost of the loupes
Learning curve
Not for all procedures
Learning curve
Not for all procedures

ULouis: Visualization of preparation margins

Meharry: Benefits-
1).Operator vision is greatly improved.
2) Maintains- patient and operator working distance.

Problems-
1) Requires that operators remain at a specific working distance.
2) Field of view is limited.

MUSC: Necessary aid to aging eyes.
In most cases necessary for quality dentistry.
Problem is cost, but inexpensive magnification aids are available.

UNC: We have not identified any additional problems, and the benefits are better visualization.

NOVA: Developing tactile and other sensory skills needed in addition to visualization.

UVA: Some freshman cannot see general basic detail of exercise while using magnification because it provides a narrower view of operating field.

V. **Regional CODE Agenda**
(Please see agenda following attendee form.)

VI. **National CODE Meeting**

A National CODE meeting will be held Thursday, February 21,2002 4:15-6:00PM at the Fairmont Hotel in Chicago, Illinois. This is in conjunction with the annual meeting of the Academy of Operative Dentistry. Please submit 1-2 items for consideration for the 'agenda' of the National Meeting. Suggestions as to how to make this brief meeting productive and efficient are needed.

UFL: Great move to having this meeting - it gives better recognition of what CODE is about at a national meeting. It may encourage more faculty involved with CODE or the Operative Academy or get more involved with both.

MCG: Use the Wednesday afternoon before the Operative Academy Meeting or the Saturday morning afterwards for a National Symposium on CODE. This would provide 3-4 hours of time so that the session could be more productive and a couple of formal presentations could be made.

UNC: What area(s) in operative dentistry currently deserve more research?

VII. **Suggestions for CODE.**

What can the organization do to improve its effectiveness?

UFL: Publish interesting findings for CODE meetings in a well-read dental journal. Get suggestions from regional CODE meetings and give input for the Operative Section at the ADEA meeting.

MCG: Electronic newsletters quarterly or more often that would go to the school contact person and then be shared with the rest of the operative faculty. Strong showing at the Operative Academy Meetings and at the ADEA Meetings.
Provide a test bank of exam questions or curriculum items i.e., PBL cases that can be shared.
Propose or support initiatives for Standard of Care Treatment or Curriculum Standards.
Insure a strong presence on the National Board Test Construction Committee.

Meharry: Pass on much of the information and decisions that the CODE develops and accepts to the general dentist population and the various other departments in the school of dentistry.

MUSC: Continue regional and national meetings
Maintain good communication.

UNC: It is very good.

What is suggested to improve the Web site?
<http://netserv.unmc.edu/code/codeFrame.html>

MUSC: Good Web site!

Meharry: Add more links to Operative - Restorative sources.

Other suggestions?

Meharry: Discussion of pulp protection and/or post operative sensitivity after restorations. In view of the recent articles that proclaim the differences or lack of differences of the materials being used today!

CODE Region _VI (Southwest)__ Attendees Form

Robert Kovarik	UKY	859-257-2147	859-247-1847	rokova01@uky.edu
Valeria Gordan	UFL	352-846-1641	352-846-1643	vgordan@dental.ufl.edu
Paul Blaser	UFL	352-392-4345	352-846-1643	pblaser@dental.ufl.edu
Mike Healey	VCU	804-858-2977	804-828-3159	mhealy@vcu.edu
Andre Ritter	UNC	919-846-6356	919-966-5660	Andre_Ritter@dentistry.nc.edu
Abby Brodie	NOVA	954-262-7342	954-262-1782	abrodie@nova.edu
Tim Hottel	NOVA	954-262-7349	954-262-1782	thottel@nova.edu
Tom Smith	MUSC	846-792-3765	843-556-8165	Sto@musc.edu
Roosevelt Smith	Meharry	615-327-6719	615-327-6026	RSTROMA@bellsouth.net
Valencia Hereford	Meharry	615-327-6359	615-327-6036	whereford@home.com
Michael Yacko	Meharry	615-327-5321	615-331-6339	skywalkerdali@hotmail.com
Gary Crim	U-Louisville	505-852-1303	502-852-7163	Gacri01@louisville.edu
Kevin Frazier	MCG	706-721-2881	706-721-8349	kfrazier@mail.mcg.edu
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Frank Caughman	MCG	706-721-2881	706-721-8319	fcaughma@mail.mcg.edu
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Charles Thomas	UKY	859-323-5486	859-257-1847	Cathom1@uky.edu
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Darlene Sand Wall		859-344-8500	859-344-8506	sandwall@prodigy.net

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**CODE Regional Agenda
Region VI, Lexington, Kentucky
October 24–26 2001**

- 1. A) Is your institution offering students a National Board Preparation Course? If so, what is the format? How far ahead of the actual examination date? How long have you offered this course (s)? If no formal course is offered, how do you encourage or facilitate student preparation for these exams?**

University of Florida

Yes. Individual departments hold review sessions. In the semester leading up to the examination. For a number of years. Along with the formal course, the students are given time off to study prior to the examination date.

Medical College of Georgia

Yes, our department participates in a multidiscipline National Board Preparation Course. Typically, the total time slot assigned to us is about 2 hours with the four sections of Operative Dentistry, Dental Materials, Fixed Prosthodontics and Removable Prosthodontics responsible for approximately 30 minutes each. The format can be short lectures and handouts to update the Senior Class on salient topics.

We have been offering this review for more than 8 years. The course is usually offered a few weeks before the Part II Exam date.

University of Kentucky

Yes, we review old exams and hold preparation classes approximately 4-6 weeks prior to the National Boards, Part II. This course has been offered the past two years.

University of Louisville

Yes. We have 4 of them: 1 for Part I and 3 for Part II.

1. Part I review course in the Summer term just prior to the Part I examination. The course meets on Fridays for 6 weeks. Three of the Fridays consist of 9:00am to 4:00pm lectures and three of the Fridays have morning lectures only. Topics cover all subject areas on Part I. This course has been offered for 6 years.
2. Operative review course. One hour course that meets for 16 weeks in the Fall semester for Seniors. Several faculty lecture on various topics. Past Board questions are reviewed. This course has been offered for 10+ years.
3. Special topics course. One hour course that meets for 16 weeks in the Fall semester for Seniors. Topics covered are endodontics, materials for prosthodontics, FPD, removable prosthodontics. This course is in its 3rd year.
4. Periodontics review. One hour course that meets for 16 weeks in the Fall semester for Seniors. This course is not totally a Board review course. Advanced perio topics are covered as well as review of past Board questions pertaining to periodontics. The Board review portion is in its 2nd year.

Meharry Medical College

Yes. Each department is required to provide instruction/review in their discipline prior to taking the Part I or II of the National Dental Board Examination. The Kaplan review is also offered. This occurs about one month prior to the examination. The review is required and has been for several years (10 plus years).

Medical University of South Carolina

Yes. Format: One hour review during lunch hour (12-1 pm) over a one-month period. Each hour is devoted to one area of dentistry, i.e. Operative, Endo, etc.

This "course" has been offered for two years. Students also have access to previous exams released by the Board and many of them purchase the "study books" which are commercially available.

University of North Carolina

No course is offered. Practice exams are provided with help from faculty in the Departments of Operative Dentistry and Prosthodontics.

NOVA

Yes, for Part II. Fall semester course before December boards with "University of Illinois" based final exam. Course must be passed to take National Boards. Part I course is in the planning stage.

University of Virginia

Relative to the General Practice dept, no formal prep course is given. We do give appropriate clinical board exams (mock boards) approximately 3 weeks prior. This operative mock board takes place over 1 day and includes CI II amalgam, CI III anterior composite and cast gold inlay, onlay or full coverage (prep, impression, temporary and model only).

B) Are you aware that representative faculty from dental schools can visit the ADA in Chicago for National Board Test Review? Did you know that you are required to notify the ADA ahead of your visit in order to have school performance data from the most recent examination available?

University of Florida

Yes

Medical College of Georgia

Yes, faculty from Fixed Prosthodontics and Occlusion have visited the ADA in the last 2 years.

University of Kentucky

Yes

University of Louisville

Yes

Meharry Medical College

Yes

Medical University of South Carolina

No

University of North Carolina

Yes, one faculty from the Department of Operative Dentistry is going this year.

NOVA

Yes to both. We have sent faculty for the last two years to do this.

University of Virginia

No, fortunately there has not been a need to visit.

2. **As we move from 'requirements' to 'competency'- based clinical criteria, faculty must develop ways to assess clinical skills. What evaluation criteria and forms does your school currently use? Are you planning to change or update those forms? What is your 'clinical grading scale'? Please provide examples of your clinical competency evaluation forms.**

University of Florida

A list of competency procedures for each semester is given to the students and a certain number of competency procedures from this list are required for each semester. The required competencies gradually become more difficult each semester. Two faculty members check the competency procedure and an agreed grade (between the 2 faculty) is given. Along with competency requirements, daily procedures are counted and are factored into the semester grades. No daily grades are given for non-competency procedures.

Medical College of Georgia

The faculty are calibrated by the Junior and Senior Clinical Course Directors before Mock Board Examinations. We adhere to standardized evaluation forms very similar to the ones used by SRTA.

University of Kentucky

Currently use formative grading form (written verbal feedback with no daily grade). Developing (as adjunct or replacement) a criterion based evaluation with a daily grade (0-4).

University of Louisville

Each of the disciplines has developed its own performance criteria and grading forms. In Operative, for example, I had developed performance criteria for the pre-clinic course in the early 1990's. When we began clinical competency exams, the same criteria were used in order to have uniformity between pre-clinic and clinic. Having just gone through our accreditation visit, the competency process was one of the areas that was examined by the team.

Most disciplines review forms on a regular basis. No major changes are contemplated that I know about.

For Operative, we use the same scale in the pre-clinic as we do in the clinic.

3 = Exceptional; satisfies all criteria

2 = Acceptable; could be improved with minor changes

1 = Manageable; needs major improvement

0 = Weak; unsatisfactory and/or not correctable within tolerable limits

Other disciplines have also adapted the 3-2-1-0 scale.

Meharry Medical College

Copy enclosed FCCE and Clinical. Some changes are being made to present evaluation form.

Medical University of South Carolina

We use a pre-printed booklet containing competency grading criteria and grade forms for each student. Grading criteria include four general headings (Oral Diagnosis and Professionalism, Rubber Dam, Cavity Preparation, Finished Restoration) under which are specific grading criteria.

We periodically change/update as needed.
Grading Scale: 5-point increments up to 100.

University of North Carolina

UNC has a Clinical Evaluation Document Manual.

NOVA

We have produced competency forms, example attached, for all areas of restorative. Students' grades are based on these competency exams, not daily grades.

University of Virginia

See attached Competency forms -- 10 such competencies were completed. Yes, there will be significant changes for the juniors in 2001. There will be a Fall and Spring competency on manikin in clinic under mock board conditions. Each of these 2 competencies will be 1 day (1/2 day on procedure, 1/2 day on treatment planning). These competencies include a critical thinking component to complete the exercise. No daily grades are given in clinic. Grading is 0,2,3,4 for competency only.
0=clinically unacceptable

2=average work, needs improvements but is functional

3=above average work, minor changes required

4=superior work, no changes necessary

3. Does your school regularly use caries assessment strategies in the pre-doctoral curriculum? Are you currently using any methods described in the so-called “Medical Model” of treating dental caries in your student clinics?

University of Florida

Yes - caries assessment is required on every assigned patient. A form is available and information is gathered and the form filled out. (See Attachment #2)

Yes - 1) degree of caries risk is determined; 2) possible predisposing factors are discussed; 3) all retentive sites treated; 4) antimicrobial prescription is given (if called for); 5) bacteria cultures are used to determine level of bacteria activity.

Medical College of Georgia

We started teaching caries risk assessment in the Introductory Operative Dentistry Course two years ago. Another lecture expanding on this material is presented in the Senior lecture series.

No formal protocol exists to utilize the “Medical Model” in treating dental caries in our Junior and Senior Clinics. It is up to individual faculty to review the chart and advise the student and patient on how to treat and prevent dental caries.

University of Kentucky

Yes. Plaque scores, diet analysis. No biological testing – i.e. mutans counts. Med model – no.

University of Louisville

Contrary to popular opinion, we still use an explorer but it is not the sole determinant for restoring a tooth. Students are instructed to look for other indications of a carious lesion, such as a change in the translucency of the enamel. We do not use lasers, electrical impedance. Digital radiography is available in our emergency clinic but is not generally used for screening patients.

We employ Preident 5000 in some cases as well as pit-and-fissure sealants. We do not use such methods as salivary functioning tests, fluoride varnishes, or chlorhexidine rinses.

Meharry Medical College

Yes, but this assessment is carried out in another department – mainly Oral Diagnostic Sciences, Preventive Dentistry, (Quality Assurance – Dr. Sharon Carter) and Periodontics Department.

Medical University of South Carolina

Unfortunately, No.

Using the Medical Model? Not much beyond preventive education and treatment.

University of North Carolina

Yes – it is multidisciplinary; we teach the Medical Model in Operative Dentistry.

Nova

Only in pre-clinical course content.

University of Virginia

Yes, all patients (new or maintenance) must be assessed for caries risk. The subsequent re-evaluation is also carried out at 3, 6, 12 month intervals.

The medical model is employed as often as possible in clinic. Use of select full-time faculty in treatment planning has increased the use of preventive therapies.

(F tx, caries susceptibility tests, CHX, Rx F, etc). Particular attention is given to the preventive portion of treatment plan.

- 4. The concept of minimal intervention for treating dental caries is becoming more widely accepted and supported by research. How has this *concept* changed treatment philosophy and procedures carried out in your pre-doctoral clinics?**

University of Florida

It has changed it considerably. Not only in our treatment philosophy in faculty practice, but also in our treatment philosophy in teaching. More posterior conservative resins are being done, plus less removing of entire restoration - which means more "repairs" and monitoring of restorations.

Medical College of Georgia

As a department, we support and embrace the concept of minimal intervention. At each restorative appointment, we review the planned treatment chair-side to determine if the most conservative approach has been considered. Minimal intervention concepts would take priority over other options if they were determined to be most appropriate for the situation.

University of Kentucky

Preclinically, minimally invasive techniques are emphasized. Clinically, this emphasis is continued with more minimally invasive restorations being done.

University of Louisville

We teach minimal preparations where indicated (i.e. we do not follow all grooves and fissures when preparing every tooth).

Meharry Medical College

It has not changed our philosophy. The Operative Department still makes the final decision on whether to treat a lesion by operative procedures or other methods.

Medical University of South Carolina

More conservative preparations, even considering repair where indicated. Sealant use as a substitute for “extension for prevention.”

University of North Carolina

Dental caries has been more recognized as a disease, and the treatment has focused more on the etiologic factors than on the cavities. Students are presented information about cariology in the preclinical Operative course. That is then followed by methods of “non-surgical” treatment (antimicrobial, fluoride, sealants), then composite and amalgam restorations are presented.

NOVA

Since we are a new school, we started with this “minimal intervention” philosophy.

University of Virginia

Faculty more willing to allow students to provide PRR, sealants &/or combination of both. Slot preps are also allowed in clinic-but used infrequently. In addition, incipient lesions are treated with remineralization therapy; application of the low dose-high frequency fluoride philosophy.

Do students perform air abrasion preps or use so-called fissurotomy burs?

University of Florida

Yes - small 1/4 round bur is taught to use to determine if sealant, flowable composite, resin based composite, or amalgam, etc., is to be placed. An elective on the use of Air-Abrasion is nearing completion; for presentation this Spring/Summer. This will be a hands-on course.

Medical College of Georgia

The students have access to two Microdent Microabrasion units in the clinic. We also have the latest Midwest AirTouch unit as a teaching tool. The microabrasion units are mainly used in the clinic to repair acrylic and porcelain facings and to a lesser degree for placing conservative composite restorations. This technology is not used routinely for preparations.

Currently, we do not stock fissurotomy burs in the student clinics.

University of Kentucky

No. We question the advantage.

University of Louisville

No.

Meharry Medical College

No air abrasion, fissurotomy burs are generally not part of the students issue.

Medical University of South Carolina

No.

University of North Carolina

No.

NOVA

Air abrasion is used in our pre-doc clinic and in pediatrics. We use disposable air abrasion dental handpieces (Airbrators – NonInvasive Meds).

University of Virginia

No air abrasion in pre-doctoral clinics. Fissurotomy burs are available and used; however most fissures are investigated with burs commonly included in bur kits. (1/4 round).

Do posterior conservative resins ("preventive resin restorations") count as much as traditional preps with other materials?

University of Florida

The term preventive resin restoration is no longer used in operative. Either a patient receives a sealant or a resin-based composite and is charged and counted accordingly.

Medical College of Georgia

Preventive Resin Restorations count as much as any direct restoration. Since the students have to perform at least 100 direct procedures, we believe that the more complex procedures will even out with the simpler ones (PRR).

University of Kentucky

Yes

University of Louisville

We don't perform very many PRRs but there is no distinction between PRR and a one surface posterior composite resin.

Meharry Medical College

No

Medical University of South Carolina

Yes, a PRR counts as much as a one-surface composite restoration or a one surface amalgam restoration. Exception: One-surface direct gold restoration counts for more.

University of North Carolina

Yes.

NOVA

Yes.

University of Virginia

Yes, same point value as composite resin and includes the sealant (1 point)

How much credit is given for sealants, fluoride treatments and other preventive measures?

University of Florida

Most operative procedures are given a weighted value - factored in with the ADA codes. Some procedures are left up to the faculty to determine how much weighted value is given (within a stated range 0.5 - 2.0). All operative procedures receive same degree of weighted value. Examples: 2 surface amalgam - 1.5 weighted value, 1 sealant - 0.5 weighted value. Enamelplasty/polished amalgam/margination - determined by faculty.

Medical College of Georgia

Sealants, fluoride and other preventive measures are adjunctive treatment that does not count towards direct restoration credit.

If these procedures are planned, they are listed in the patient's treatment plan and the student cannot get a "case complete" unless all treatment has been accomplished.

University of Kentucky

Under our comprehensive care system, we only count that all patients are treated.

University of Louisville

No credit in Operative Dentistry.

Meharry Medical College

None in the Operative Department – the Pediatric Dentistry Section does give credit.

Medical University of South Carolina

Generally, preventive treatment is done primarily in Periodontics. Sealants are done in Operative Clinic and count for 25% of a one surface composite restoration.

University of North Carolina

Minimum. We are working on this.

NOVA

Credit recorded but we have no “expected experience” level or competency in these areas (except for prophylaxis).

University of Virginia

Sealants: 1 point

Fluorides: In office 0.5 pt

Remin: 0.5 pt

Home F rinse: 0.25 pt

Caries Suscept. Test: 2 pts

Rx: Prevident 5000+: 0 pts

Prevident 5000 & tray: 1.25 pt

Temporary restorations: 2.0 pts

Xylitol gum: 0

Nutritional Counseling: 0.5 pts

Caries Risk Assessment: 0.5 pt

What film are you using for bitewing radiographs for the purpose of caries diagnosis. Do you alter the KV to enhance diagnosis?

The consensus answer was that “e speed” film was being used according to KV prescribed by the manufacturers.

Regional Meeting Notes:

- Dr. Kevin Frazier was re-elected for another 3-year term as Region VI Director.
- Dr. Sand-Wall (SRTA Board Rep.) attended our meeting for the 2nd year in a row.
- Next year’s meeting at Nova in Ft. Lauderdale is tentatively planned for Friday and Saturday instead of our traditional Thursday and Friday. We believe this will reduce travel costs and minimize the disruption of our school schedules.