

**Consortium of Operative Dentistry Educators
(CODE)**



**REGIONAL REPORTS FALL
2015**

Web site: <http://www.unmc.edu/code>

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THE CODE 2015 REGIONAL REPORTS IN PDF FORMAT MAY BE FOUND ON THE WEBSITE:

[HTTP://WWW.UNMC.EDU/CODE](http://www.unmc.edu/code)

PLEASE UPDATE YOUR SCHOOL'S DIRECTORY PAGE IN THE CODE NATIONAL DIRECTORY LOCATED ON THE CODE WEBSITE. TO ACCESS THE DIRECTORY, USE THE "PLEASE HELP UPDATE" LINK ON THE MAIN MENU OF THE WEBSITE.

THANK YOU FOR YOUR ASSISTANCE.

On February 25, 2015, CODE will hold a National/International meeting during the annual meeting of the Academy of Operative Dentistry in Chicago. It will be announced at that meeting, that Dr. DeSchepper will be stepping down as National Director of C.O.D.E. Dr. Gary Stafford from Marquette University will become the new National Director of C.O.D.E. effective immediately after the National Meeting.

I had the privilege of attending the 2015 Region IV meeting at Indiana University School of Dentistry, Indianapolis, IN. Dr. Michele Kirkup served as a first-time host and she did an outstanding job of conducting the meeting, completing the regional report and showing the attendee's excellent hospitality. There was lively discussion, great food and camaraderie. It was an opportunity for me to renew life-long friendships in the Great Lakes Region. I would like to take this opportunity to thank Michele for hosting a wonderful meeting. Dr. Babka has stepped down as Region IV director. Thanks to Marsha for her outstanding service to the region and to C.O.D.E. Dr. Michelle Kirkup of Indiana University was elected as the new Region IV director.

I also had the privilege of attending the Region III meeting that was hosted by Janet Harrison at the University of Tennessee Health Science Center, College of Dentistry in Memphis, TN. Again, it was a great meeting and Janet proved to be an outstanding host. I would like to take this opportunity to thank Janet for hosting the fun and very informative meeting. As a bonus, we had a great presentation by Dr. Chris Walinski on laser dentistry and development of the laser dentistry program at UTHSC-Memphis. Dr. Walinski is an internationally known expert on laser dentistry and also a new faculty member at UTHSC-Memphis.

Please continue to familiarize your Deans and Department chairs with CODE's objectives and its value to their school, and the operative discipline. The deans' support is crucial in providing the means for faculty to attend or host Regional meetings.

Spread the word about CODE and work to provide input to Licensure Boards on Restorative Dentistry. Encourage/invite members of the Licensure examining boards to attend the Fall Regional meetings. Invite our colleagues in the Armed and Public Health Services to our meetings - both Regional and National.

Support of CODE by payment from the schools for annual dues is excellent, although not without repeated follow-up efforts by the National office. The same can be said for the collection of the Fall

Regional Reports. However, after only one “prompting”, I am greatly appreciative of the timely response this year.

Thanks go to webmaster, Dr. William Johnson, for the timely website updates and enhancements. My appreciation also extends to the Regional Directors and the meeting hosts, the Operative Section of ADEA and the general membership for helping to make CODE what it is and what it accomplishes. Thanks to all participants of C.O.D.E. It has been an honor serving the organization the last few years as National Director.

Thanks to my Dean, Dr. Timothy Hottel for his support. I could not have accomplished much of the operational aspects of CODE these past three years without the assistance of Ms. Wanda Patrick. Ms. Patrick in addition to helping me with C.O.D.E serves as secretary to three of the deans at the school as well as volunteering for many extra duties. Thank you, one and all.

Sincerely,

Edward J. DeSchepper, M.A.Ed., D.D.S., M.S.D.

A handwritten signature in cursive script that reads "Edward J. DeSchepper". The signature is written in black ink and is positioned below the typed name.

Consortium of Operative Dentistry Educators (CODE)
Foreword – Edward J. DeSchepper, M.A.Ed., D.D.S., M.S.D.
National Director
DeSchepper ED (ed.) CODE Regional Annual Reports 2015.
<http://www.unmc.edu/CODE>

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

This portion written by
Dr. Larry Haisch, DDS, Immediate Past National Director

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 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 of developers of other lessons.

The benefit, 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 (Consortium 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 the national director for distribution. 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 operation, each region devised a system of rotation so that a different school hosted the regional meeting each year, thus providing a greater degree of motivation and bringing schools closer together in a spirit of fellowship and unity. Each region submitted suggestions for future agendas, thereby insuring a continued discussion of interesting and relevant topics. A collection of tests or a test bank was started in early 1976. This bank 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.

Reaffirmation of CODE official title (2003)

CODE changed its name from *Conference of Operative Dentistry Educators* to *Consortium of Operative Dentistry Educators* due to a ratification vote at the Fall 2003 Regional CODE meetings.

Establishment of Board of Directors and Articles of Incorporation

In 2013, Dr. Larry Haisch stepped down as National Director. The organization flourished under Larry's outstanding leadership and 15-year tenure as National Director. Bank accounts needed to be transferred to the new National Director's locale and name. In a post 9-11 society, banks accounts are not as easy to establish for non-profit organizations as they once were. The organization was compelled to establish a Board of Directors and write Articles of Incorporation in order to conduct regular organizational business. The Board of Directors consists of all Regional Directors as well as the At-Large Directors.

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. There 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

1974 - 1982	Robert B. Walcott (UCLA)
1982 - 1986	Thomas A Garmen (Georgia)
1986 - 1989	Frank Miranda (Oklahoma)
1989 - 1998	Marc Gale (Florida)
1998 - 2012	Larry Haisch (Nebraska)
2013 – 2015	Ed DeSchepper (Tennessee)
2016-Present	Gary Stafford (Marquette)

ORGANIZATION OPERATION

The Section of Operative and Biomaterials of the American Dental Education Association (ADEA) has

“oversight” responsibility for sustaining and managing the activities of CODE.

- The National Director of CODE will be appointed by the Executive Council of the Operative and Biomaterials Section for a three-year renewable term.
- The National Director will be selected from a list of one or more individuals nominated for the position by the CODE Advisory Committee after input from the regions.
- The National Director will perform the functions and duties as set forth by the Council.
- The National Director will be a joint member on the Council and will be expected to attend a regional CODE meeting and the annual meeting of the Council and Section. The National Director may also serve as an elected officer of the Council.

A CODE Advisory Committee (and now also Board of Directors) will assist the National Director with his/her duties.

- A CODE Advisory Committee will consist of the Regional Directors from each of the six regions, the National Director and three 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
- Will attend the region's meeting
- Ensure that meeting dates, host person and school are identified for the following year
- Do follow-up assist on dues "nonpayment" by schools
- Ensure that reports of regional meetings are submitted **within 30 days** of meeting conclusion to the national director
- Ensure 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

CODE ADVISORY COMMITTEE (Also, Board of Directors)
(Revised 1-6-16)

	Region	Regional Director	Phone/E-mail	Term (3 years)
I	Pacific	Dr. Oanh Le UCSF San Francisco, CA	650-558-9253 oanh.le@ucsf.edu	2015-2018
II	Midwest	Dr. Christa Hopp Southern Illinois University Alton, IL	618-474-7052 chopp@siue.edu	2015-2018
III	South Midwest	Dr. Shalizeh "Shelly" A. Patel University of Texas Health Science Center Houston, TX	713-486-4269 Shalizeh.Patel@uth.tmc.edu	2013-2015
IV	Great Lakes	Dr. Michele Kirkup Indiana University College of Dentistry Indianapolis, IN	317-278-3398 mkirkup@iu.edu	2015-2018
V	Northeast	Dr. Richard Lichtenthal Columbia University New York, NY	212-305-9898 rml1@columbia.edu	2014-2016

VI	South	Dr. Mary Baechle Virginia Commonwealth University School of Dentistry	(804) 828-7297 mbaechle@vcu.edu	2014- 2016
II	At-Large	Dr. William Johnson UNMC Lincoln, NE	402-472-9406 wwjohnson@unmc.edu	2015- 2018
III	At-Large	Dr. Edmond Hewlett UCLA Los Angeles, CA	310-825-7097 ehewlett@dentistry.ucla.edu	2015 - 2018
VI	At-Large	Dr. Kevin Frazier Georgia Regents University August, GA	706-721-2881 kfrazier@gru.edu	2014- 2016
III	National Director	Dr. Ed DeSchepper UTHSC College of Dentistry Memphis, TN	901-448-1313 edeschep@uthsc.edu	2013- 2015
II	Web Master	Dr. William Johnson UNMC Lincoln, NE	402-472-9406 wwjohnson@unmc.edu	No Term

The National Agenda for 2015 was established after review of the suggestions contained in the reports of the 2014 Fall Regional meetings, National CODE Meeting and from the Regional CODE Directors. Previous National agendas are reviewed to avoid topic duplication. Inclusion of a previous topic may occur for discussion from the aspect to what has changed and the response/action taken and the outcome.

Thank you to the Regional CODE Directors and the membership for making recommendations to establish the National Agenda. Each Region is encouraged to also have a Regional Agenda.

Each school attending the Regional Meetings is requested to bring their responses to the National Agenda in written form AND electronic media
This information is vital to the publication of the Annual Fall Regional Report.

Continue to invite your colleagues, who are Dental Licensure Board examiners and your Military and Public Health Service colleagues who head/instruct dental education programs to your Regional meetings.

Each Region should select next year's meeting site, date or tentative date during your Fall Regional CODE meeting so this information may be published in the Annual Fall Regional Report and on the Web site.

The Regional meeting reports are to be submitted to the National Director in **publishable format** as an attachment to e-mail.

The required format and sequence will be:

1. *CODE Regional Meeting Report Form***
2. *Summary of responses to the National Agenda.*
3. *Individual school responses to the National Agenda*
4. *The Regional Agenda summary and responses.*
5. *CODE Regional Attendees Form***

** (Copies may be obtained from the Web site:
<http://www.unmc.edu/code/>).

NOTE: to locate the web site via a search engine, enter "Academy of Operative Dentistry", click on "member", then use the link "CODE & ADEA".

Send an electronic copy of the report to the National Director. Electronic versions are to be submitted **within thirty (30) days** of the conclusion of the meeting.

National CODE Meeting:

The meeting will be held **Thursday, February 25, 2016** from 5:00 pm to 6:00 pm at the **Drake Hotel, 140 East Walton Place, room TBA** in Chicago, Illinois. Suggestions as to how to make this meeting productive and efficient are requested.

National Directory of Operative Educators:

The CODE National Office maintains the National Directory of Operative Educators as a source for other professionals. It is imperative that the information be as current as possible.

To update your university's directory listing on the CODE website,
<http://www.unmc.edu/code/>,

Click on the red link, Please help update,@ found under the CODE menu on the left side of the screen. Make any necessary changes and click submit form@.

Please have each school in your Region update the following information for the National Directory of Operative Educators:

School name and complete 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.)

Your help and cooperation in accomplishing the above tasks helps save time and effort in maintaining a complete web site and publishing the Annual Fall Regional Report in a timely fashion.

Thank you,



Edward J. DeSchepper, MA.Ed., D.D.S., M.S.D.
National Director, C.O.D.E.
UTSCH College of Dentistry
875 Union Avenue, Suite S103
Memphis, TN 38163

edeschep@uthsc.edu
Office: 901-448-1313
Fax: 901-448-1625

2015 NATIONAL CODE AGENDA

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

I. Admissions and Retention

- 1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.
- 2) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?
- 3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer? Please give examples.
- 4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

Academic Performance?

Behavioral?

Combination of both?

- 5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?
- 6) Are students' tuition insured? If so, by whom? What is the cost?
- 7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

II. Materials/Techniques/Curriculum

- 1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?
- 2) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?
- 3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?
What types of cements are being used and where
-1) Metal-based

- 2) Ceramics
- 3) Post & Cores
- 4) Veneers

- 4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?
- 5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?
- 6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?
- 7) How does your school manage rampant caries patients? Please provide evidence where possible.
- 8) What efforts do you make to give all students a uniform experience in clinic?
- 9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?
- 10) Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.
- 11) What are the materials and selection criteria for complex posterior restorations?
- 12) How often are onlays provided as treatment vs full crowns?
- 13) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?
- 14) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?
- 15) Liners, Bases, and Cements. Which ones are being used for what purposes?

III. Student/Program Assessment

- 1) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?
- 2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?
- 3) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?
- 4) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

5) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a “one and done” approach? Please provide rationale for the choices.

I. OTHER

II. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

CODE REGIONAL MEETING REPORT FORM

REGION

LOCATION AND DATE OF MEETING:

University: _____

Address: _____ Date: _____

CHAIRPERSON:

Name: _____

Phone #: _____

University: _____

Fax #: _____

Address: _____

E-mail: _____

List of Attendees: Please complete the CODE Regional Attendees Form (following page)

Suggested Agenda Items for Next Year:

LOCATION AND DATE OF NEXT REGIONAL MEETING:

Name: _____

Phone #: _____

University: _____

Fax #: _____

Address: _____

E-mail: _____

Date: _____

Please return all completed enclosures to:
Dr. Edward J. DeSchepper, National Director,
UTHSC College of Dentistry, Memphis, TN 38163.

Deadline for return: 30 Days post-meeting

Office: 901 448-1313 Fax: 901-448-1625 E-mail: edeschep@uthsc.edu.

Also send the information via e-mail with all attachments.

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

Consortium of Operative Dentistry Educators (CODE)



REGION I (PACIFIC) ANNUAL REPORTS

Region I Director:

Dr. Oanh Le

UCSF

San Francisco, CA

Region I Annual Meeting Host:

Dr. George Richards

Roseman University of Health Sciences

South Jordan, UT

Region I Annual Report Editor:

Dr. Oanh Le

UCSF

San Francisco, CA

CODE REGIONAL MEETING FORM

REGION: I (Pacific)

LOCATION INFORMATION FOR 2015 REGIONAL MEETING

University: Roseman University of Health Sciences

Dates: September 25 & 26, 2014

Chairperson: Oanh Le, DDS

Phone # 415-519-9852

University: Roseman University

Fax # _____

Address: 10894 South River Front Parkway

E-mail grichards@roseman.edu

South Jordan, UT 84095

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

- How are you using CAD/CAM digital dentistry in your pre-clinical courses?
- Ditto for clinical use?
- How is virtual reality haptic feedback training be used? Is it efficacious?
- How to motivate students when there are no requirements?
- How to get faculty on board with integration of technology in clinic CAD/CAM, Laser, etc.
- When do you redo a crown with marginal staining in one area of the restoration?
- What are schools doing to prepare students for the new comprehensive National Board Ex
- How does your school/department calibrate faculty and how often are faculty re-calibrated?
- How is your teaching integrated by WREB related criteria? Have you made any changes in your teaching related to WREB requiring a class II composite?
- How is it going with Portfolio?
- How are your clinical group set up?
- How do your clinical groups work?

LOCATION INFORMATION FOR 2016 REGIONAL MEETING

University: University of Pacific

Dates: September 22-23, 2016

Chairperson: Dr. Phil Buchanan

Phone #: 408-427-2552

University: UOP

Fax #: _____

Address: 155 5th St.

E-mail: pbuchanan@pacific.edu

San Francisco, CA 94103

Please return all completed enclosures to;

Dr. Edward J. DeSchepper, National Director
 UTHSC College of Dentistry
 875 Union Avenue
 Memphis, TN 38163

E-mail: edeschep@uthsc.edu
 Phone: 901-448-7686
 Fax: 901-448-1625

DEADLINE FOR RETURN: 30 Days post-meeting

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 REGIONAL ATTENDEES FORM

REGION: I (Pacific)

NAME	UNIVERSITY	PHONE #	FAX #	E-mail
Bernard Kula	Alberta University	780-953-5754		kula@ualberta.ca
Klud Razoky	ATSU	480-219-6184		krazoky@atsu.edu
Daniel Tan	LLU	909-238-2668		data@llu.edu
Heidi Christensen	LLU	909-558-4640		hchristensen@llu.edu
Mark Estey	LLU	909-558-7388	909-558-0133	mestey@llu.edu
Harold Haering	Midwestern	623-806-7011		hhaering@midwestern.edu
Jay Morrow	Midwestern	623-572-3818		jmorrow@midwestern.edu
Karen Gardner	UBC	604-822-3566	604-822-3662	kgardner@dentistry.ubc.ca
Adriana Manso	UBC	778-987-1800		amanso@dentistry.ubc.ca

NAME	UNIVERSITY	PHONE #	FAX #	E-mail
Nirvana Anoshe	UCSF			nirvanaa@comcast.net
Oanh Le	UCSF	415-519-9852		Oanh.le@ucsf.edu
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Richard Walker	UNLV	702-302-1686		Richard.walker@unlv.edu
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Mark Durham	U Utah			Mark.durham@hsc.utah.edu
Brent Fung	Western University	909-469-8314		bfung@westernu.edu
Rose McPharlin	OHSU	503-494-6209		mcpharli@ohsu.edu
Val Garn	WREB	208-678-8980		Valgarn51@gmail.com
George Richards	Roseman			grichards@roseman.edu

NAME	UNIVERSITY	PHONE #	FAX #	E-mail
Clark Dana	Roseman	801-878-1448		Cdana@roseman.edu
David Densley	Roseman			Ddensley@roseman.edu
David Howard	Roseman	801-878-1481		dhoward@roseman.edu
Ben Wall	Roseman	801-878-1471		bwell@roseman.edu
Eric Sorensen	Roseman	385-225-7039		esorensen@roseman.edu
William Carroll	Roseman			wcarroll@roseman.edu
Reuben Kim	UCLA	310-825-7312		rkim@dentistry.ucla.edu
William Morgan	UCLA	310-206-2789		bmorgan@dentistry.ucla.edu
Yen-Wei Chen	UW			ywchen@washington.edu
James Keddington	U Utah			James.Keddington@hsc.utah.edu

**2015 NATIONAL CODE AGENDA
REGION I**

**SUMMARY RESPONSES TO NATIONAL AGENDA
(Editor Note: Questions condensed for printing purposes)**

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

No Summary Responses Submitted

2015 NATIONAL CODE AGENDA

(Evidence cited where applicable) September 24-25, 2015 Report on the proceedings of CODE Region I
Dr. Ed DeSchepper Code Regional Annual Reports 2015

<http://www.unmc.edu/code/>

Region I School Abbreviations

UA	University of Alberta	ROSE	Roseman University -Utah
ASDOH	Arizona School of Dentistry	UOP	University of the Pacific
MWU	Midwestern University College	UCSF	University of California-SF
UBC	University of British Columbia	USC	University of Southern Calif
LLU	Loma Linda University	WUHS	Western University
UNLV	University of Nevada	UW	University of Washington
		OHSU	Oregon Health Science University

I. Admissions and Retention

1.) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

UA Yes. The U of A takes 32 students out of a province of over three million thus we have a pool of very qualified motivated applicants to select from. Most dental students perform extremely well from D1 to D4 and the graduation rate is almost 100%.

ASDOH 1. Applicants must apply to AADSAS by November 15, for the incoming class.

2. Applicants must submit secondary application by January 15.

3. Applicants must be a permanent resident or U.S. citizen.

4. Applicants must meet all posted program prerequisites before matriculation.

5. Applicants are prescreened at ATSU's Kirksville, Missouri processing center to ensure applicants meet the minimum requirement for of 2.5 Science GPA and Cumulative GPA. Those applications meeting prescreening criteria are sent to the Mesa, Arizona campus for review of all academics, DAT scores, community service work and Dental experience.

Those applicants that meet preferred criteria are forwarded to the appointed Faculty admissions file reviewers. The faculty reviewers choose applicants for interview by reviewing an applicant's prerequisites, where it was taken and at what level, dental experience, community service work and letters of recommendation. If an application receives a 'yes' from both faculty reviewers the applicant will be invited for an interview but, if a mutual decision cannot be made the application is sent to the Direct of ASDOH

Admissions for a final review and decision.

6. Interviews are required for acceptance.

a) Applicants must participate in a group exercise

b) Individual applicants must participate in a panel interview, which includes two interviewer

and one student interviewer, when available.

- c) Individual applicants must participate in a multiple mini interview, where they will be in given 3 different scenarios and will need to interact with a standardized patient.
- d) Interviewers are chosen from the full-time and part-time staff and faculty as well as volunteers from the Dental community. Applicants are given a financial aid/budget presentation
- e) Applicants are placed in one of three group status: accept, alternate and do not accept. That is recommended by the admissions committee to the Director of ASDOH Admissions after the interview

MWU Yes, besides standards for academics and DAT scores they are evaluated on their motivation and personal behavior. Our admissions faculty do an excellent job at choosing our candidates although a few make take more work than the rest.

UBC In general yes – we consistently score above the national average in the National Board Exams

LLU At Loma Linda University School of Dentistry, we have a formal admissions committee that evaluates all our candidates. We assess cognitive, non-cognitive, and experience elements in making our selection. By keeping an accurate outcomes database, we are able to link admissions data with graduation outcomes. It is through these correlations that we have been able to “weight” the criteria for admissions more successfully. Our incoming students average a science GPA of 3.40 with a 70th percentile on the DAT scores (19) as a minimum acceptability.

UNLV In general, our admissions committee does an adequate job of screening and accepting students that will succeed in dentistry. Our DMD graduation rate, first time National Board Dental Examination pass rate and Dental Licensure pass rate average 90% or above. We accept 82 students in the freshman class and graduate 75 or more students each year, our graduation rate is greater than 90%.

ROSE For the most part, yes. While we have had only one graduating class they have done very well with their board exams as a whole. That is a pretty good measure of the quality of students we accept. Of course there are some exceptions.

No. The screening process seems to focus on ability to succeed didactically rather than pt management skills, interpersonal skills, organizational abilities, and hand skills. I wish I could propose solutions to what I perceive to be a problem, but I can't think of how to screen for these skills
We have too many students that do not have adequate hand/eye coordination skills that struggle to develop the skills necessary to be good clinical dentists

UOP Yes. The School of Dentistry strives to enroll students who share its vision of leading the improvement of health by advancing oral health. The school has a dedicated admissions office, the Office of Student Services (OSS), with five full-time staff to recruit and matriculate qualified pre-doctoral students. The dental school has specific admissions criteria, policies, and procedures that are followed when admitting predoctoral students. Additionally, in 2009 the school formally adopted technical standards to inform prospective and enrolled students of the skills, physical abilities, and behavioral characteristics necessary to enter into, progress through, and complete the program. All admissions criteria, application guidelines, and technical standards are presented on the school's website, in the school catalog, and in the Official Guide to Dental Schools published annually by ADEA.

Admissions information and requirements are also delivered in print or electronically to undergraduate health science advisors, applicants, and potential students. Detailed admissions information is provided during individual advising sessions, pre-health and graduate school fairs, presentations to pre-dental clubs, and pre-dental outreach activities and events

UCSF Yes. The School selects candidates by holistic review. Of more than 2000 applications, 260 are selected for interview, with a goal of having a class of 90. Our Pass Rate for National Boards is very high and our on time graduation rate is also very high. We have an extremely low attrition rate.

USC I feel the Admission Office & Admission Committee try their best in screening and they did an amazing job interviewing students applying for the program. We have 3000 applicants for the dds program. The office & committee has limited resource and have to work very hard that time of the year to screen our applicants. The turnover rate for staff in the admissions office is high. That makes the job more difficult.

WUHS Yes, we have had an attrition rate which is better than the national average attrition rate reported in the ADA Surveys of Dental Education.

UW The composition of the admission committee includes clinical and research faculty. They interview the qualified applicants individually. The students' academic performance is not the only consideration. The extracurricular activities and community services as well as the students' personality and potential are also evaluated at the interview process. In general, the admission committee does a good job for screening and accepting applicants.

OHSU Yes—there are numerous applications that are screened and are systematically processed to find the students with the best potential for dentistry. Our graduation rate is fairly high. On average, 97.33% of our admitted class will complete their program within the given 4-year curriculum. Of those who do not complete the curriculum with their class the majority of them will complete the curriculum sometime within the following academic year.

UCLA Yes, we receive approximately 1500 applications. These are screened based on objective performance, (GPA and DAT scores) to reduce this number to about 400 for a secondary application. Of these, about 150 students are invited for an interview, and 88 students are accepted. During the interview process, we allow them to meet with current dental students to evaluate their interactions within group settings. They also receive a formal interview with two faculty members, and are asked to write a short essay for an ethical question. Occasionally we have experiences with students with poor English skills but have well written essays in the primary and secondary applications. Having applicants write an essay at the interview has helped us evaluate applicant's language and writing skills.

2.) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

UA We use the results of the DAT in this area and do no further evaluation of dexterity. In my experience, perhaps 5% of the D1 class have significant challenges with dexterity but most of these students, with a positive attitude and \practice, catch up in later years. Given that perhaps 1-2% of students have a problem in this area, and the difficulty in identifying these individuals, there is little evidence to support pre-admission testing at this time.

ASDOH We eliminated the manual dexterity tests beginning in last year's admissions cycle. We used to collect the manual dexterity data that was conducted on a Perdue peg board and over the years Dr. Razoky did not find that their performance on the Perdue peg board reflected their skills once they were in pre-clinic and clinic. I think the PAPT and any other manual dexterity could help but would be the best predictor.

MWU No, it is not evaluated. Very few would be naturals at the skills needed. Some of our top clinicians began with sub par hand skills. We are currently in the third year of a study to evaluate past experiences and how they correlate to performance.

UBC No

Not dexterity per say but psychomotor skill acquisition yes.

It would make the pre-clinical training easier for the student and the faculty.

I would suggest working with cognitive psychologists to develop a test that would be reliable for psychomotor skill acquisition ability.

LLU LLUSD does not routinely utilize a dexterity test for the traditional DDS program. We do evaluate PAT scores, but our data indicates that the PAT is not always a true indicator of pre-clinical and clinical performance. Desirable applicants that score less than 16 on the PAT are given a dexterity assessment, carving out on a plaster block an intaglio with specific measurements. We score this dexterity assessment for surface smoothness, measurement accuracy, flatness, right-angle line and point angles, and margin integrity. However, a student's dexterity skill is only one aspect, albeit an important one, in predicting success as a dentist.

UNLV We do not evaluate dexterity during the admissions process. While some members of the admissions committee feel dexterity should be evaluated, the majority feel less inclined to institute this evaluation. We have all seen students with less than adequate hand skills during the DS1 year, yet with desire and effort they can become competent practitioners.

ROSE No, applicant dexterity is not measured. I personally feel that it should be measured – but how is the big question. As to how to do it, a carving or waxing project could be evaluated. However, I would like to see supervised examination to see if the student could take instruction and criticism and then show improvement.

Consensus by all operative faculty is that dexterity should be measured as part of the admission process. Often in the application review process students indicate that they are proficient in video gaming, weight lifting, auto repair, etc., etc. I am not sure that these types of things are true indicators of manual dexterity. One suggestion is for applicants to bring to the interview examples of dexterity projects they have performed.

UOP No specific dexterity exam is administered. The admissions office requires complete and recent DAT scores from all applicants. Although admissions decisions are holistic in nature, manual dexterity as expressed in the PAT score is an important consideration. There is a good amount of evidence in the literature to support continued use of the PAT (and other sections of the DAT) in dental admissions decisions.

UCSF No. We have researched carving examinations and found them to be non-predictive of success in dental school.

USC Not in the traditional DDS program, but yes in our Advanced Standing Program for International Dentists. It has been the tradition for over four decades that our international dental applicants are invited for an interview and dexterity test. There were even some written tests given in the past. Because these applicants are already dentist abroad, we get invite 150 candidates out of the 900 applied to the dental school for

interview, which involves a PBL interview and half a day of practical exam. The exam usually consists of two preps and one wax carving. The test do allow us to pick dentists with better hand skills, but not necessary common sense or chair-side manner.

I agree (Devon) that for traditional DDS student, they do have the opportunity to grow and learn over their four year time. There may not be need to do a complicated dexterity test during admission. However we recently had one student dismissed at the end of the first year due to dexterity problem. The student had problem with every single course. I believe there should be some kind of dexterity in the admission process that could prevent this type of problem.

WUHS I don't think that would be helpful to understand a candidates skill potential as it is just one point in time. Also in a competency based education system some skills require more attempts for particular students and it would be unfair to judge someone and assume that was their full potential at the beginning of their career. Also I think we would lose some good candidates. Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method? We do not propose a pre-acceptance evaluation for technical skills.

UW The applicant's dexterity is not evaluated as part of the admissions process currently. The main reason is there is no strong correlation between the applicant's dexterity test and their future clinical performance.

OHSU No, we do not have a test for dexterity as part of the admissions process. Much of the literature out there suggests that dexterity tests as part of the interview/admissions process are not predictive and add little value to the admissions process. In fact, several Canadian dental schools no longer require that applicants to their programs complete the manual dexterity test as part of the CDAT. It may give insight to the natural ability, but the process of teaching imparts the necessary skill. If dexterity is tested on only one occasion, it may not give a true picture of the applicant's ability.

UCLA No, but we do rely more on the PAT score, with a minimum cutoff point. While there may not be a direct correlation with PAT scores and clinical performance, we have found some correlation with low PAT scores and difficulty with technical skills both in the pre-clinic and clinic. PAT scores served as a decision point to cut off for the review process.

On the other hand, we have a dexterity test, (two simulated clinical preparations), in the admission process for our international program for foreign dentists, (PPID), who are to join as 3rd DDS students when they get accepted.

3.) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

UA Yes. The students that are a poor fit for dentistry are almost all due to attitude issues. There are students who go to dental school due to family pressure and display little interest in their studies and those who are unwilling/unable to complete the required work. In the past we have expelled students for stealing (stolen from class funds), lying and of course cheating (getting classmates or dental labs to do their work).

ASDOH We had problems with students with ethical and moral issues and were dismissed from the program . The Community Service hours / recommendations that we receive, besides the Multiple Mini Interviews that we conduct in our interview process where the applicants are interacting with a standardized patient and their

case scenario includes two ethical and one moral scenario in which the applicant is evaluated on and we feel this will help to eliminate these problems.

MWU Yes, primarily in the behavioral and innate abilities. We work closely with these students to improve them. The hand skills are improved much easier than behavior.

UBC Yes – unethical and unprofessional

LLU We have undoubtedly accepted students who subsequently manifest to be unsuitable for dentistry. The challenge has always been predicting which these students are at admissions. Our data indicates we can account for only 25% of the variance when solely applying cognitive admissions data to predict successful outcomes in dental school. Consequently, we are increasing our reliance on non-cognitive data (e.g. conscientiousness, motivation, achievement striving) as success predictors in addition to cognitive ability.

UNLV Yes, on occasion, we have had students with behavioral and ethical deficiencies. We have experienced students cheating, suffering from depression, attention deficit syndrome, learning disabilities, etc.

Regarding innate abilities, we have instituted - Minimum Technical Standard for Admissions and Matriculation. This document is provided to all candidates for admission. The candidates must read and sign the document. The document states: “The DMD degree is a professional degree, unique in that the graduate is prepared upon licensure to practice all disciplines within the scope of a general dentist. This requires that the student in the curriculum acquire didactic knowledge, as well as, psychomotor skills and the attitudes essential to the profession and agreed upon by the faculty as requisite for the practice of general dentistry. To successfully negotiate the curriculum, students must have a sufficient motor function to execute movements essential to providing oral healthcare to patients, a level of cognitive aptitude, ethical competency, and hand-eye coordination. ...With this in mind, the student must be able to meet the following technical standards with or without reasonable accommodations.” Standards listed are: motor skills, sensory/observational, communication, cognitive, behavioral, ethics and professionalism.

Continued enrollment and graduation will depend upon the successful demonstration of both knowledge and skills listed in these technical standards.

ROSE In my opinion, yes. We have had a couple of students who have struggled due to ethnic and language problems. Just because they play football on a college level or are a concert pianist or violinist does not necessarily translate into becoming a successful dentist. In fact, sometimes those successes may interfere with accepting instruction and criticism. We have had brilliant student who struggle with had skills, chair-side manner, motivation to learn and succeed, and language skills to manage patients. We have also had one that I believe lacks the morals and ethics to be a successful dentist. Faculty indicate that they are aware of several students that have struggled – attitudes, lack of respect, physical limitations, etc.

All respondents at our school unanimously agreed that we need to do a better job is accepting students who are better prepared and adapted for the rigors, challenges and responsibilities of dental school and practice

UOP Yes. No admissions process, regardless of how well conceived and implemented, is foolproof. Each year a small number of students is asked to repeat the first year for academic reasons (didactic, lab/clinic, or both). Occasionally, where academic issues exist, behavioral considerations may also play a role. It is very rare that a student is dismissed from school without the option of repeat.

UCSF Although we make every effort to accept students we believe will succeed, occasionally a student matriculates who decides that dentistry is not the appropriate career choice and leaves the program. As part of this effort, and in addition to an assessment of academic capability, our holistic review and evaluation strives to evaluate candidates according to the likelihood they will support our mission, work to achieve our vision, and do so while upholding the values of the School.

USC Yes. There were several students every year who do not have the either the personality, hand-eye coordination, or dexterity to become a dentist. While there are always students with dexterity issues, there seems to be more students with personality issues in the recent classes. I'm not sure it is an admission problem or more of a generation issue.

WUHS We have had a student struggle with hand skills and not complete the program after many extra hands on hours. This occurred once. We have had one student repeat a year due to technical deficiencies and then progress well after the extra time for development. Some soft skill such as professionalism and communication will become noticeably lacking and has occurred with a couple of students, but with early identification and interventions the students were able to improve and complete the program.

UW Yes, there are few students are not well suited to become a good dentist. For the skill incompetency, we try to identify them as early as possible in preclinical courses. Often time we could get good success to help them. However, the students who have behavioral and ethical issues are usually difficult to identify until their senior years.

OHSU Yes, this has happened. We have accepted students who may have applied to dental school out of family expectation. Some students have convinced themselves that they love dentistry, but find that they really are not at ease with the patients.

UCLA Yes, but it is a very small minority of any class. Regardless, it is difficult to select those who will be ethically competent before we actually experience it. It is still a challenging task for us.

4.) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

Academic Performance?
Behavioral?
Combination of both?

UA The university makes it very difficult to expel students and even to require a student to repeat a course or year. 4 years ago a student was expelled for cheating on an exam and for getting his school project done at a dental lab. Most years, there are usually 1-2 students in D1, D2 and D3 who are required to repeat a year. If a student is deficient in D4 they are required to do some make up in the spring and are allowed to graduate with their class. There has been on average one student every two years required to withdraw due to acts of poor character. None recently.

ASDOH We have dismissed students for academic performance. Students who are required to remediate 3 modules will be recommended for dismissal . We have a very condensed basic science curriculum and we

have dismissed or given the students the option to withdraw to improve and take advanced classes and reapply again. We have dismissed 2 students after the second year. Also we have dismissed 2 students due to ethical and professional reasons.

MWU Failing two courses in a year is grounds for automatic dismissal.

Behavioral? This is much more difficult to assess, a student who would be dangerous to treat patients would need to be dismissed if no correction can be made. We have not had to deal with this to date

Combination of both? We have had first year students that fail one course and do not remediate satisfactorily. If the curriculum committee recommends that they be able to repeat the failed course the following year. All of them have successfully reintegrated to date.

UBC It depends on the breach. We have a fair process in place that works to benefit all. Our school will not release this information.

LLU Over the past 7 years, we have lost about 6% of our incoming students by the time of graduation. Half of these students (3%) were dismissed for academic reasons. The other 3% left the program because of professional standards issues, health issues, or personal choice. A student dismissed this year (2015) was due to a combination of academic non-performance and academic integrity. This is not typical for us.

UNLV The last students dismissed were at during the 2015 academic year for poor academic performance. Virtually all dismissals are for poor academic performance. A student may fail and remediate two courses during one year. Three failures in one year are grounds for dismissal. A maximum of three failures and remediation during the four year dental school experience are permitted.

ROSE Very difficult. We model a mastery program of learning where the student must obtain a 90% to pass any exam – but we provide remediation and a second or third opportunity to pass the exam. There have been instances where an upper level decision has over ruled the mastery principle to avoid the necessity of probation or dismissal. This is pretty common in new schools.

I have no knowledge of anyone being dismissed as yet from this institution. There have been students with several ethics violations with documentation and the student was not dismissed

UOP A two-stage academic probation system (intervention, contract) is used to provide customized support to students with deficiencies from stated academic criteria in didactic, preclinical, behavioral, or clinical performance. The probation system, due process, and the conditions for placing a student on academic probation are described in the school catalog and discussed in detail by the Assistant Dean of Academic Affairs at matriculation. The assistant and associate deans for academic affairs, first-year advisors, and Group Practice Leaders are available to meet with students who have specific questions regarding their academic standing and due process rights.

One student in the class of 2015 was dismissed in the first year. Three students in the class of 2017 are repeating the first year.

Academic Performance? By far the greatest number of dismissals, including repeat, are for academic performance.

Behavioral? The school has never dismissed a student solely for behavioral issues.

Combination of both? Occasionally there are behavioral issues that are tied to academic performance that can lead to a dismissal.

UCSF Academic Performance: Students can be dismissed for poor academic performance.

Behavioral: Students can also be dismissed for a pattern of unprofessional behavior.

Combination of both: Students can also be dismissed for a combination of reasons.

Dismissals are very serious actions that faculty take very seriously. There are student review and appeal processes in place. Recently one student was dismissed for academic reasons, and another for unprofessional conduct.

USC It is more difficult to dismiss students now at USC. It almost needs to be a very serious violation of behavior, academic, or ethical violation on the student part to be disqualified by the SPPEC committee. Then the students get to appeal. The last few students dismissed from the dental school involved one with a dexterity/personality problem, one with an ethical issue, a couple with behavior issues. (forging a signature, miss class, grade, attempt to hack electronic exams).

To prevent student causing patient harm in the clinic, we do evaluate D2 class in their overall performance during three consecutive fixed prosthodontic courses before they enter the clinic. If any student in the class did not perform to a certain level to this point, the student evaluation committee do remand the student to the next class so they have to repeat these courses.

WUHS If there is consistent and clear evidence of failing to meet the level of competence it is not difficult procedurally. 2 years ago for inability to manage the technical and professional skills necessary to complete the program. Usually academic deficiency are the reason for dismissal. Usually a combination of more than one of the above.

UW It is not easy to dismiss a student. The student progress committee needs to review the request from the course directors about the student, have the student appeals and give them chances to improve. The reason for most dismissals are often a combination of academic performance and behavioral.

OHSU It is generally difficult to dismiss a student and does not happen often. The process is lengthy and we make every effort to remediate them and provide them enhanced training to get them through. There is an interesting discussion about whether this is the best approach, so we are modifying our student performance assessment committees to hopefully do a better job of identifying students who may be better off with a different career option, earlier in their dental student career.

When was the last time your school dismissed a student? 2012-2013 cycle

What was/is the reason for dismissals? Academic Performance? This was the formal reason.

Behavioral? The dismissal was not listed as behavioral in nature.

Combination of both? This is more likely the reason, typically, a student fails for academic

UCLA Over the last fifteen years we have less than five students dismissed from dental school for academic or behavioral issues. It is very difficult to get dismissed; students are usually given the opportunity to repeat the year and are given significant assistance to succeed.

The last time a student was dismissed was a little over a year ago for poor academic performance.

5.) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

UA The school itself does not have exit programs but the university will provide support services for students in this position. The type and amount of these programs is decided on a case by case basis.

ASDOH Yes we have a director of student's success who works with students to help them to make decisions.

Yes, we do give withdrawn students from ASDOH a tuition refund, based on how many days they attended compared with how many days they paid for in the given semester

MWU No on career counseling. We have not to date had a case where tuition refund was a factor. That would be handled on a case by case basis.

UBC Students are dismissed between years not during a year so this is not an issue.

LLU We facilitate counseling for all students who are dismissed or leave voluntarily. Under normal circumstances, we will refund the tuition for the current quarter; however, we do not refund the total tuition costs leading up to dismissal.

UNLV We do not offer career counseling for dismissed students. The only tuition refund or partial refund would be if the student is dismissed within the first 8 weeks of the semester.

ROSE I am not aware of such a program or tuition refund in the event of dismissal

UOP Ad hoc career counseling is available to dismissed students from faculty, advisors, the assistant and associate deans of academic affairs, the associate dean of admissions, the school psychologist, and other faculty role models. Tuition for dismissed students is prorated.

UCSF UCSF provides support for dismissed students for 30 days. They are referred for counseling and support. If the dismissal occurs within the early part of the quarter, a portion of their fees is refunded to them. The campus has standard regulations to cover these circumstances.

USC No counseling. Tuition refund needs to follow university protocol with registration and drop off deadline.

WUHS yes the financial aid office will provide guidance

UW We do facilitate career counseling but not tuition refund for dismissed students.

OHSU No

UCLA We have a part-time counselor who may give minimal career counseling, but no refunds for students who are dismissed.

6) Are students' tuition insured? If so, by whom? What is the cost?

UA Not at this time.

ASDOH No

MWU No

UBC Not sure

LLU Our students are not tuition-insured. We do, however, provide disability and medical insurance

UNLV No.

ROSE I don't know

UOP No

UCSF No

USC There is an optional tuition program where the student pays a little over 1% of tuition to a private insurance company. But that only covers drop outs due to medical reasons.

WUHS No

UW The students' tuition are not insured.

OHSU No

UCLA None

7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

UA Not at this time

ASDOH If the student indicated that he/she has interested experience different field. We talk the students and help to make the decision.

MWU No

UBC We try

LLU Yes, we do facilitate connections with other professional schools within our University such as transferring into the medical program. We also offer references and contact information with other dental schools.

UNLV No.

ROSE Not that I am aware of

UOP Yes, the school has assisted many dismissed (or withdrawn) students with documenting their dental school career as they pursue other avenues.

UCSF No

USC No. We may refer student to university consoling, but we do not have consoling service within the dental school. We do have a couple of persons in the dental school that are experienced and may be doing consoling unofficially.

WUHS No

UW We do facilitate counseling for a dismissed student to help them pursue other careers.

OHSU No, though there is a process to help students who are struggling (behavioral counseling) in which this issue is likely brought up. One of our dismissals was counseled into the Pharmacy program, and that student successfully completed that program.

UCLA None

II. Materials/Techniques/Curriculum

1.) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

UA Emax using E4D technology with diamond burs.

ASDOH We use Zirconia burs. Very limited cases. No pre-clinical hands on teaching

MWU Yes, we teach crown removal in the second year. This year we have added 3 specialty burs. one for zirconia, one for Emax, and one for metal.

UBC We're teaching cutting off Procera crowns cemented with Relyx Luting to dentofom teeth. Students are using a cylinder diamond bur. Later in clinic they have access to Brasseler's Zirconia/PFM Crown removal bur block kit with DuraCut diamonds.

LLU How to remove a bonded all ceramic crown is mentioned in lecture using diamonds with copious water spray. Clinically, any bonded ceramic crown that needs to be removed is monitored and assisted by the attending faculty.

UNLV Yes, cutting off BruxZir or Emax crowns are taught during the DS2 year. Fine diamonds are recommended for sectioning.

ROSE There is no formal instruction in cutting off zirconia or lithium disilicate crowns. That process if needed is supervised by the clinic team leader. We are presently looking into various burs and diamonds for this process. We have discovered that a fine diamond works better than a medium course diamond. We are testing the Komet 4ZR-014 diamond – no data as yet

UOP No

UCSF This is on an as-needed basis. The course director of the CAD CAM program has available burs.

USC We don't teach how to cut off Zirconia or Emax crowns that are bonded in the clinic or preclinic. We do have protocol in our clinical exam manual for cutting off a crown. In the Anterior Fixed Prosth course, we are having the student cut off a previously bonded composite onlay from their CAD-CAM Course. This is new this trimester.

WUHS No. Probably have to start teaching this soon.

UW We teach students use specific diamond burs to cut Zirconia restorations (Komet, 4ZR). For Emax crowns, we use regular diamond burs with ample water irrigation.

OHSU It is discussed in lecture. There is a plan to have students mill a crown, bond it onto the manikin tooth and then later cut it off. This is planned for Winter term this year.

UCLA We teach crown removal for full gold crowns at the pre-clinical level after they cast and cement them onto an ivory tooth. However, this is not realistic as the crown is removed very easily and is not similar to clinical situations. When possible, if a student has a crown on an extracted tooth, the faculty will demonstrate how to remove this crown. We recently added a teaching course in which a lithium disilicate crown is made using CAD/CAM. We are planning on doing this exercise using extracted teeth and have them experience removing the crown. At this time, this technique is mostly being taught in the clinical level, using fine diamonds and a lot of patience.

2) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

UA There is no air abrasion used in the school at this time. Over the last five years the use of amalgam has declined to about 30% of posterior restorations

ASDOH No

MWU No.

UBC We're not teaching these techniques.

LLU No, we do not currently teach air abrasion or co-jet techniques.

UNLV Air abrasion and co-jet are taught in the DS1 year and are available in clinic. However, Z-Prime Plus (Bisco 10-MDP product) is used more for bonding metals. In posterior teeth, the amalgam percentage in clinic is approximately 30% vs. resin-based composite 70%

ROSE We do not teach air abrasion/co-jet techniques in the pre-clinic.
Air abrasion is addressed in our didactic D3 and D4 seminars only
Estimated that less than 10% of all restorations placed in the clinic are amalgam

UOP Yes First year / 4th Qtr
Amalgam technique is taught in the first year Sim Lab curriculum.
Current clinic percentage for posterior restorations:

YEAR	Amalgam %	Composite %
2011 – 2012	20.4	79.6
2012 – 2013	18.2	81.8
2013 – 2014	10.1	89.9
2014 – 2015	Pending	

UCSF No

USC We only teach air abrasion when we do bonded restorations. In the surface treatment of cad-cam onlays prior to bonding, or when we treat previously immediately sealed dentin surfaces, and when we do composite repairs.
According a report, we did three amalgams last year in the main clinic.

WUHS Yes, In CAD/CAM for luting. None

UW The air abrasion is taught to apply on the intaglio surface of metal restorations. The co-jet technique is only applied on the intaglio surface of zirconia restorations, especially for a non-retentive preparation.

OHSU We are not teaching this technique.

UCLA For air abrasion techniques, we use them very minimally, especially at the clinical level and on an individual basis. But we do use abrasion technique for crown/inlay intaglio adjustments. Currently, the ratio of amalgam and composite for direct restorations is about 30:70 but that is not related to the use of air-abrasion.

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics? What types of cements are being used and where?

- 1) Metal-based
- 2) Ceramics
- 3) Post & Cores
- 4) Veneers

UA Approximately 50/50.

What types of cements are being used and where

- 1) Metal-based BisCem from Bisco

- 2) Ceramics BisCem from Bisco
- 3) Post & Cores BisCem from Bisco
- 4) Veneers resin cement

ASDOH We do 50% PFM and 50% all ceramic restoration
 Fuji cements (Resin modified) for metal based cement and ceramic crowns except Empress we use NX3 nexus cemen. We use Max Cem Elite for Prefabricated metal or fiber glass post Post & Cores. For veneers we use NX3 nexus cement

- MWU** 1) Metal-based 48%
 -2) Ceramics 51%
 -3) Post & Cores ? all are non-metallic
 -4) Veneers 1%
 Ceramic - MultiLink and new Variolink Esthetic Plus
 SpeedCim – resin cement
 PFM - RBMGI

UBC Non-metal ceramic crowns are now 13% of all crowns done in clinic by DMD students.

See table below for cement types:

Restoration type	Material	Cement type	Brand available at CSD
Full metal Inlay/Onlay/Crown/Retainer MCC Crown/Retainer	Metal alloy, with/without a ceramic veneer	RMGIC	RelyX Luting (3M Espe)
Resin Bonded FDP	Base Metal alloy	Chromabond resin composite resin cement	Panavia 21 (Kuraray)
ACC - Zirconia coping (Procera)	Zirconia	RMGIC	RelyX Luting (3M Espe)
All Ceramic Monolithic (e-max) Inlay/Onlay/Crown	Lithium disilicate (e - m a x)	Dual cured composite resin cement	Empress (Dux) DuLink (Dux)
Porcelain/Ceramic Laminate Veneer	Feldspathic ceramic Leucite reinforced ceramic (Empress) Lithium disilicate (e-max)	Light cured composite resin cement	Choice 2 (Bisco)

For the prior academic year, the total ceramic crowns done were 2152. Of these, 336 were an all- ceramic substrate for a percentage of 15.6%

Cement routinely used:

Metal-based crowns: Ketac Cem, Duralon (IDP), Rely-X luting & Rely-X Unicem All-ceramic: Accolade, Calibra, Prelaude adhesive Post & core: Zinc phosphate for cast post; DuoLink/All Bond for fiberpost

UNLV

Variable, depending on Mentor. Ceramic crowns 10-70%, PFM 30- 90%. In general , more PFMs than ceramic.

What types of cements are being used and where

- 1) Metal-based- RMGI (FujiCem GC) and Self-etch adhesive resin (Unicem 3M) cements and Z-Prime if required.
- 2) Ceramics - Self-etch adhesive resin (UniCem,3M), dual-cured resin (NX3-Kerr) with Z-Prime (Bisco) for zirconia and silane for lithium disilicate
- 3) Post & Cores - Self-etch adhesive resin (Unicem, 3M)
- 4) Veneers – Light-cured resin cement (NX3-Kerr)

ROSE

All ceramic – 75%, metal ceramic - 25%

- 1) Metal-based Resin modified glass ionomer
- 2) Ceramics Feldspathic – Resin bonding; Lithium Disilicate- resin bonding, resin modified glass ionomer; Zirconia – resin bonding, resin modified glass ionomer
- 3) Post & Cores Resin bonding with self-etch primer – dual cure
- 4) Veneers Resin bonding

UOP

Posterior crowns placed in the clinics %

Year	Gold	PFM	Ceramic
2011 – 2012	29.4	55.6	15
2012 – 2013	24.1	53.3	22.6
2013 – 2014	22.8	41.1	36.1
2014 – 2015	Pending		

-3) Post & Cores 246 (Fiberposts mainly)

-4) Veneers 84

Metal-based: RMGI, Resin (self etch)

BruxZir/Zirconia RMGI, Resin (self-etch)
e.max: Resin (light cure/dual cure)

UCSF UCSF does not have this percentage data available.

Resin Cements:

C & B Luting Cement (Bisco)

Rely X

Calibra (Dentsply)

Dual Cement (Ivoclar Vivadent)

Multilink Automix (Ivoclar Vivadent) For use with CAD/CAM System

Resin Reinforced Glass Ionomer Cement: Fuji Plus (GC America)

Glass Ionomer Cements: Ketac Cem Applicap (3M ESPE)

USC Even though the policy in the clinic is that from bicuspid to bicuspid, the first choice full coverage restoration is a zirconia crown, unless there's a reason to do something else. However, at this time, there are still more PFM crowns done in USC than all ceramic crowns, main reason being our faculty are still more comfortable with PFM. Our students do more CAD-CAM onlays than traditional cemented crowns.

-We use resin modified glass ionomer cement (Fuji Cem) to cement all gold, PFM and zirconia crowns.

-We bond e.Max crowns using heated composite or dual cure cement (Nexus)

-We use primary resin modified glass ionomer cement (Fujicem) to cement metal posts. But we use dual-cure resin cement to cement fiber posts.

-We use heated LC composite to bond CAD-CAM onlays.

-We use heated LC composite to cement porcelain veneers.

WUHS 30% Non-Metal to 70% PFM.

What types of cements are being used and where

-1) Metal-based – RelyX

-2) Ceramics – RelyX and Composite

-3) Post & Cores - RelyX

-4) Veneers – Composite

UW -1) Metal-based – Resin-modified Glass Ionomer (Relyx Luting)

-2) Ceramics – For Lithium-disilicate : Self-adhesive resin cement(Unicem) or Dual-cured resin cement (Variolink II), For Zirconia: Resin-modified Glass Ionomer (Relyx Luting)

-3) Post & Cores – Self-adhesive resin cement (Unicem)

-4) Veneers – Light-cured resin cement (Relyx Veneer)

For the restorations on the anterior teeth, non-metal ceramic crowns and PFMs are about equal amount. For the restorations on the posterior teeth, PFMs are still the majority of the material choice, about 80% of the clinical cases.

OHSU Non-metal ceramic crowns = 16%; PFM =84%

What types of cements are being used and where?

-1) Metal-based –Resin cement (Rely X)

- X) -2) Ceramics –Resin and composite cement (Panavia and Variolink, Rely
 -3) Post & Cores- Resin cement (Rely X)
 -4) Veneers Resin and composite cement (Panavia and Variolink)

UCLA 1:3 ratio for ceramic crowns vs. PFMs

- 1) Metal-based – RMGI and GI cements
- 2) e.max full coverage: RMGI in the posterior and light cure resin cement in esthetic areas as required for shade matching. For e.max inlays and onlays we use dual cure resin cement.
- 3) Post & Cores – GI and resin cement
- 4) Veneers – light-cure resin cement

4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

UA Not at his time.

ASDOH No, we teach amalgam. Many of our students works in CHC and join the military so we feel they need to be trained how to work with Amalgam.

MWU No – do to use in PHS and USAF e-based?

UBC Dentistry is not considering remove amalgam from our curriculum. Even though the use of dental amalgam in private practices and in university clinics has already decreased, there is still a strong demand for its use in public services. The use of amalgam raises multiple concerns regarding the environment. Recently, the Minamata Convention (2013), signed for representatives from more than 140 countries, stated that by 2020 multiple products that use Hg in manufacturing process, as soaps, lamps, thermometers, etc., will be replaced for mercury-free alternatives. However, amalgam restorations will be phased down only as there is still no restorative material capable of fully replace amalgam for its clinical performance, greater longevity and lower costs compared to resin composites currently available in the market. For large restorations and in public services there is still a great demand for amalgam restorations, which with proper clinical manipulation and disposal can be considered a safe restorative alternative. The total allowable level of mercury intake (43ug/day) is much higher than what has been accepted as of mercury intake from amalgam restorations daily (1 to 2ug/day) (Olsson and Bergman, 1992; Berglund, 1990). There is no evidence that mercury from amalgam restorations can cause any harm to the patient's health, as the absorption of mercury through the gastrointestinal tract is minimal, the mercury from amalgam that is swallowed adds very little to the total body burden of mercury (Dodes, 2014). Other sources of mercury, specially ingested organo-mercurial compounds are the major responsible factors for mercury health impacts described in the literature. Lastly, teaching the amalgam restoration technique assists in the development of skills needed for the dental practice training.

LLU We currently teach and will continue to teach amalgam restorations. There are still indications and situations where amalgam would be the material of choice e.g. difficulty with access and moisture control, lesion location, patient finances, etc.

UNLV No, there is no scientific evidence that dental amalgam is harmful to patients. If we remove dental amalgam from the curriculum in the future, it will likely be for environmental reasons.

ROSE While very few amalgams are being done in clinic, there is no plan on removing amalgam from the curriculum. It is believed that amalgam continues to be an appropriate restoration in certain circumstances and is safe. Some board exam still accept amalgams. The amount of time teaching amalgam procedures is being diminished; however, some faculty believe it should be removed from the curriculum. Some faculty believe it would be a disservice to remove amalgam from the curriculum since there continues to be a need in populations less served and economically challenged.

UOP Not at the present. However this will need to be addressed in the near future.

UCSF UCSF has not discussed removing amalgam from the curriculum.

USC We still teach amalgam. My co-section chair Loris Abedi is currently teaching the course, and that's the reason why he could not attend this meeting. There has been one discussion about 7, 8 years ago to try to remove amalgam from the curriculum but was not successful. There are still faculty in the school who wants to remove amalgam from the curriculum.

WUHS No. It is utilized in the off-site community clinic routinely. ADA EBP

UW We are still teaching amalgam and not considering removing amalgam from curriculum.

OHSU No, we are not at this time considering removing amalgam from the curriculum.

We believe it is a suitable material, especially in situations when isolation is challenged. The literature verifies that amalgam is superior for patients with high caries index, and this profile fits many of our patients. However, it is important for us to provide ample opportunities for students to do posterior composites, but we wish they had even more. Our patient pool is the limitation. It is based on the knowledge of performance of materials in compromised fields where moisture is unavoidable or isolation is compromised.

UCLA We are not considering removal amalgam from the curriculum for the following reasons;

- 1) Amalgam is indicated for patients with a high caries index
- 2) Amalgam has increased longevity compared to composites, especially in larger direct restorations
- 3) Graduating students need to be minimally competent to do all dental procedures
- 4) Amalgams are still used in many places
- 5) Patients need to be given all options
- 6) Numerous studies have determined that amalgam is safe for patients and dental personnel

5.) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

UA There is gold inlays, onlays or foil training in our curriculum at this time. Students are given all porcelain restoration training using E4D.

ASDOH We teach Gold Onlays in the pre-clinic. Many faculty treatment plans for gold onlays. Also we have a gold foil club as an elective.

MWU When needed posterior/ usually pt. requests/ costly-zirconia

UBC Gold is being taught for all full metal restorations and as a coping for PFM's. We have a Tucker cast gold study club for students too. The local Tucker study clubs are very supportive of their teaching and students are engaged and motivated to learn it so for the foreseeable future gold is here to stay. No substitute is being sought but patients can have zirconia crowns if gold is not acceptable for esthetic reasons.

LLU Full and partial coverage gold crown restorations are currently being taught in the D2 year. Gold coverage crowns are done clinically based on tooth location, patient preferences, amount of occlusal clearance, etc. Other crown types done clinically are the standard porcelain-fused-to-metal and the all-ceramic (eMax substrate) crowns.

UNLV Gold is being taught as a restorative material. Gold inlay, onlay and crown preps are being taught. The DS2s do one casting with technique metal in preclinic. Clinic gold crowns are Argenco 20 (Argen) – Ag 40%, Pd 20%, Au 20%.

ROSE Full gold veneers are taught with regard to crown preparations and inlays and onlays – more for preparation techniques. Noble or high noble metals are being used for metal ceramic copings. With the advent of lithium disilicate and zirconia crowns and the patient's desires to either have no metal in their mouths or wishing to have "white" restorations, the options for gold restoration is diminishing.

UOP Gold preps (inlay/onlay) are taught in the first year Sim Lab. There is more emphasis on ceramics.

UCSF Gold is still used as a restorative material.

Ceramo metal crowns and solid zirconia or lithium disilicate crowns are also taught.

USC I currently teach the first indirect course to D1 dental students, called the "Indirect Restoration Course" during the third and last trimester of the freshmen year. We teach students full gold and partial veneer gold crowns among all other single unit indirect restorations, including PFM, all ceramic and CAD-CAM onlays. The full coverage gold crown is the first crown preparation they do in my course. The course took up 2 ½ days out of the week during that trimester.

-In the clinic, CAD CAM onlay has dominated our indirect restorations. Our 2015 graduates did more than 1000 cad-cam onlays before they graduate. The number of gold crowns has diminished dramatically in our clinic. Unfortunately, at this time, partial coverage gold crowns are almost limited to redo's of some old PVCs done at USC in the past just because we believe they are more aggressive in preparation than bonded onlays.

WUHS Still teaching Gold Inlays/Onlays (2 sessions) & Full Crowns. What are you using as a substitute? Starting to use Milled Composite and Lithium Disilicate (e.Max).

UW For the restorations in the posterior teeth, partial or full gold restorations are still our first recommendation for the patients

OHSU We continue to rely heavily on gold. Gold alloys will continue to have a future. We generally prescribe noble alloys (not high noble), with around 40-50% gold content. We offer a selective course to 3rd and 4th year students in Tucker technique. 32% of our full or partial coverage restorations are gold.

What are you using as a substitute? Milled restorations and ceramics are an option offered to patients. However, we are definitely increasing our use of zirconia (monolithic, not veneered) and lithium disilicate (e.max). We take a conservative approach to tooth reduction, 1.5-2 mm on the occlusal. Gold alloys will continue to have a future.

UCLA Gold, both in partial coverage and full coverage restorations has a very significant place in our curriculum. It is unsurpassed for longevity and compatibility with tooth structure and there are many studies to support this.

We have a Tucker Conservative Cast Gold Study Club that meets on weekends eight times a year with over half of the entire student body participating.

For patients who choose not to have cast gold restorations, and prefer non-gold, we use lithium disilicate and zirconia cores with layered porcelain (Lava) in addition to metal-ceramic restorations.

6.) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

UA Possible but unlikely. Patient assignment is a challenge thus student experience is variable over the clinical years. Each student is assigned to a clinic group leader who is responsible to manage their students' clinical cases but you can only assign that are available. We have outreach and satellite programs that offer treatment to the population with high rates of untreated caries which allows more diverse treatment experiences.

ASDOH All of our students experience primary caries removal during their dental education

MWU NO!!!

UBC We have a bus program that bring pediatric patients in requiring extensive work. All students receive extensive exposure to caries in this rotation. Generally caries is found on patients in the Integrated Care Clinics and our outreach programs as well. Busing and Out Reach programs

LLU Our students experience both primary caries removal as well as replacement of defective restorations. Graduation requirements are that all students complete a set of competency exams covering various restorative procedures.

UNLV No, all clinical operative dentistry competencies are on teeth with primary caries.

ROSE We have not seen that to be a problem – meaning, all of our students will have the experience of removing primary caries. If that were not the case, yes that would be concern. A lot of caries here in Utah

UOP No. Removal of primary caries is fundamental to restorative dentistry.

UCSF All students learn “primary caries removal”.

USC No. The average dental student in USC do at least 40-60 direct restorations, most of which are primary carious lesions. This does not include caries clean out, emergency or endodontically treated teeth.

UW In our new curriculum, the 3rd year dental students have total 12 weeks restorative clerkship training. There are minimal requirements to be accomplished in the clerkship. Thus, the students have sufficient experience for primary caries removal.

OHSU The patient pool provides ample primary caries lesions. If so, is this a concern? What do you do to ensure that students are getting adequate training/experience? Our students have abundant experience in caries removal.

UCLA No. At the pre-clinical level, we have a required exercise of removing caries from extracted teeth. It is virtually impossible for a student to graduate without clinical caries removal experiences. It is in fact one of our required competencies.

7.) How does your school manage rampant caries patients? Please provide evidence where possible.

UA There is no structured program and clinic leaders manage all cases as they fit.

ASDOH It depends on the severity of the case could from Caries management (Fluoride varnish) to Interim restorations (GIC) to surgical.

MWU Disease control plan w diet management / sometimes a medical consult for systemic contribution. Treat sextant by sextant Resin Modified / amalgams, if possible quadrant by quadrant – getting pt return quickly. OHI w Prevident

UBC Jolanta Aleksejuniene,

LLU Patients that are diagnosed as being moderate to high caries risk go through a regiment of caries risk management. Patients with rampant caries are treated initially with caries control procedures followed by definitive restorations when their caries risk has been managed.

UNLV OHI, Nutrition Analysis, Caries debridement with glass ionomer or RMGI restorations, Chlorhexidene rinse for two weeks, fluoride varnish, high fluoride toothpaste, fluoride trays, 3mo recall.

ROSE Rampant caries are frequently treated by removal of the caries and the placement of a glass ionomer provisional restoration for caries control. The restorations are then replaced over time. Severely rampant caries are referred

UOP CAMBRA is performed for all patients. Home care products are dispensed relative to results desired. Home care preventive methods are reviewed and tailored to the specific needs of the patient. Methods vary depending on the type and need of our patients (age, habits, remaining teeth, desires, etc.) Treatment can vary relative to the clinical findings. (debridement restorations relative to EBD)

UCSF Prevention and disease management: CAMBRA treatment philosophy including preventive products, dietary counseling, and patient education. We also use Silver Diamine Fluoride.

Phase I care treatment and stabilization prior to definitive restorations.

USC We teach CAMBRA in treatment planning in the preclinic. Included a CAMBRA assessment during every treatment plan for every new patient or treatment plan update. Put the patient in risk categories. We prescribe a CAMBRA kit to every patient in risk of rampant caries. We do not have a way to track the patient compliance and whether they refilled the prescription until the appointment the student update the treatment plan

-In terms of treatment. We treatment plan a phase I urgent treatment for these patient where all caries are cleaned out and temporary restored with glass ionomer before getting another definite treatment plan..

WUHS Caries Risk Assessment, but the treatment is disease control and definitive restorations.

UW We follow the CAMBRA protocol, remove the active carious lesion, temporarily restored with GI, enhance the oral hygiene, diet control and fluoride supplement. If the caries risk is under control, then proceed the permanent restorations.

OHSU Rampant caries are managed with caries control with protective restorations (RMGI, GI), along with fluoride Rx, education, OHI and nutrition counseling. The patient is requested to return for definitive restorations.

UCLA

We initially manage rampant caries patients by doing quadrant caries control procedures followed by temporization with Traditional Glass Ionomer (Fuji IX GP). Then the patients are to come back for definitive restorations. We employ a robust CAMBRA protocol in all patients with moderate to high caries risk.

8.) What efforts do you make to give all students a uniform experience in clinic?

UA That is the role of the clinic leaders to allocate cases as they see fit.

ASDOH The students are supervised by their CCU directors who keep track of their patient's pool and making sure that all the students have enough patients to do their essential experience and competency.

MWU Assignment by CCC who monitors experiences of each student in.

UBC CPV's and patient allocation through Clinical Advisors

LLU Prior to our shift to the Division of General Dentistry this was accomplished by meeting the individual departments procedural requirement numbers. (i.e. "x" amount of crowns, CD's, partials, extractions, quads of root planing, comprehensive oral exams, etc.). These requirements provided a relatively broad experience for all students before their graduation.

As we make the transition to a case completion curriculum for graduation requirements it is a bit more nebulous. We are still tracking removable units and cases but crown and restorative requirements will become more competency-based. The Division of General Dentistry is still formulating and developing what actual requirements will end up being as far as the number of cases at the varying complexity levels that will need to be completed to meet graduation requirements. It has been suggested that we still monitor (in the background) individual procedural numbers but this has not been decided for sure yet. It will be interesting to see what develops. Those of us involved in screening and patient assignment to the students are anxious for further guidelines so that we can effectively and efficiently perform our tasks.

UNLV All students must complete the required number of clinical experiences and pass all competency examinations and required procedures.

ROSE The clinical team leader should be monitoring the student's experiences to assure that they have all experiences necessary to be able to graduate with the ability to treat or refer the patients that they will be exposed to after graduation. One team leader believes with all the effort we make that we are not very successful. Occasionally patients are transferred from one student to another

UOP The group practice leaders track the clinical experiences of their students. The students are matched with patients based on the needs of the patients and clinical experience needs of the students. Students are expected to have experience in all phases of reconstructive dentistry.

UCSF It is not possible to provide a completely identical experience for all students, however each student is exposed to and is involved in active treatment in a variety of clinical experiences such that they are prepared for independent practice on graduation. A minimum number of experiences is required for certain procedures. The patient distribution is somewhat based on student need to meet the minimum clinical experiences.

USC We require students to finish certain amount or certain procedures in order to qualify for a junior competency exam (QE: qualifying exam) and later a senior competency exam (CE). That is true in fixed and operative and removable. The one thing that we have problems the past few years are the "tooth replacement competency" which includes implant or fixed partial denture cases. The type of experience varies when it comes to this category. Many students have to do a lab project and not a real patient in order to graduate.

WUHS Reports with core clinical experiences for all students help monitor needs and patient assignment is done with this data to aide. Students have experiences in all of the procedures prior to graduation.

UW We ask the schedule coordinator try to distribute the different cases equally. Also, there are minimal requirements to be accomplished each year. In the middle of the quarter, we perform chart reviews with the students to make sure each student has uniform experience in clinic.

OHSU Students have threshold experiences in the different disciplines before they challenge skills assessment exams. All students have the same types and numbers of skills assessment exams. The students have uniform attendance requirements and instructors are systematically assigned to assure that students work with a variety of instructors.

UCLA We have a broad spectrum of minimum clinical experiences for completing their education and graduation. We have clinical advisors (Patient Group Practice Directors) who will work on evenly distributing clinical experiences among students to meet minimum clinical competency.

In addition, we have the philosophy of total patient care with students treating all of the patient needs, and patients are assigned based on students need to have a broad spectrum of clinical experiences.

9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

UA Operative teaches (me) using direct composite resin for veneers, closing spaces and other restorative situations in the lab. FPD teaches porcelain veneers and restorations in their pre-clinical labs. Our school does not have a separate esthetic course at this time.

ASDOH We teach Porcelain veneers, composite veneers and smile design. It is part of the operative module

MWU All integrated in one course. Veneers, smile design, composite veneers, ceramic onlays.

UBC Direct Bond Veneers, Porcelain Veneers, Anterior Crowns and Class IV's

Who teaches (what department)?

DBV's and Class IV's – Operative

Porcelain Veneers and Anterior Crowns – Prosthetics

LLU Students are initially introduced to esthetic anterior restorations (e.g. composite resin veneers and diastema closures) as part of their D1 Operative I course. In their D3 year, an esthetic course is taught in the Operative II course. All-ceramic and porcelain fused to metal restorations are taught during their D2 year.

UNLV Bleaching trays, resin bonding, ceramic veneer preparations, ceramic inlays, onlays and crowns. UNLV only has two departments – Clinical Sciences and Biomedical Sciences. The esthetic procedures are taught in different courses within the Clinical Sciences department.

ROSE Smile design, veneers, porcelain inlays, onlays, and direct composites. Taught in the operative/restorative/ fixed curricula integrated Esthetics are integrated in the operative/restorative course. D3 and D4 seminars are used to give further didactic instruction regarding diagnosis and treatment planning. There are no requirements for purely esthetic cases

UOP Esthetic procedures are taught by in the Sim Lab, first year curriculum. Esthetic procedures taught include: Smile Design, anterior implant restoration, diastema closure, anterior fracture restoration, and lectures on esthetic principles. The faculty is from the Department of Integrated Reconstructive Dental Sciences.

UCSF Composite, veneers (direct and indirect), ceramics (traditional and CAD CAM), bleaching.

The department of Preventive and Restorative Dental Sciences is responsible for teaching these topics, utilizing general dentistry faculty and prosthodontic faculty.

These are part of integrated courses.

USC They were taught between different courses. Dental students start learning dental anatomy, drawings, wax-ups, mock-ups, especially anterior esthetic situations, during the first two trimesters of their D1 year.

They learn composite restorations at the same time through the composite course.

During the third trimester, they learn different types of ceramics & ceramic restorations, and CAD-CAM onlays at the same time in my Indirect Restoration Course.

They then learn some posterior esthetics, including Pontic forms during a course called the "Posterior Fixed Prosthodontic Course, which takes place first trimester of their D2 year. During the second trimester of their D2 year, they review anterior esthetics, anterior fixed partial dentures, Maryland bridges, and porcelain veneers in the "Anterior Fixed Prosthodontic Course". These courses and the course directors are all under Division IV Restorative Sciences.

WUHS Diagnostic Waxing, Smile Analysis, Color, Diastema Closure, Porcelain Veneers. We are departmentless. In an integrated course, like all of ours are.

UW The esthetic procedures are mainly taught in the third quarter of the Operative Dentistry course. The content includes: composite veneer, composite diastema closure, porcelain veneers, ceramic inlay/onlays fabricated with Press or CAD/CAM techniques.

OHSU Tooth whitening/ porcelain veneers, metal free crowns, composite veneers. Restorative dentistry. Initially esthetic procedures are taught in a separate course in the beginning of second year then these procedures are taught in an integrated course in the end of second year prior to treating patients in clinic.

UCLA All esthetic experiences are being taught as an integrated course in the Direct restoration courses (e.g., Class I-VI, direct veneers, diastema closure, etc.) and Indirect restoration courses (e.g., ceramics, crowns, veneers, CAD/CAM, teeth whitening, etc.). Esthetic dentistry as a whole is also being taught in the Esthetic Dentistry course to reinforce esthetic teaching to dental students. All of these courses are taught through the Section of Restorative Dentistry.

10) Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.

UA We do not teach this concept at this time.

ASDOH No responses

MWU No

UBC “No, we are not currently teaching or using the technique but we plan to take a look at it for the future. We are interested in other school’s experience with it.

LLU Resin infiltration of early proximal caries is introduced during the students’ course in pediatric dentistry. This treatment protocol is not widely used clinically currently, primarily due to lack of faculty familiarity with the procedure.

UNLV Use of ICON (DMG) is available in clinic, however, it is rarely used.

ROSE Not taught nor provided

UOP No

UCSF No

USC Infiltration is taught but not implemented in the undergrad clinic yet. It is probably used in the advanced operative program.

WUHS No.

UW Infiltration of proximal caries with resin (Icon) was taught in 2nd year pre-clinic Operative Dentistry course. But we seldom use this technique clinically.

OHSU No

UCLA No, poor clinical evidence exists for this technique.

11) What are the materials and selection criteria for complex posterior restorations?

UA Amalgam, composite resin and porcelain are available to treat complex restoration. The decision of the material to use is made by the clinical supervisor based on the situation and their opinion.

ASDOH We teach the students to use amalgam as the # 1 choice

MWU Gold, zirconia, amalgam, composite. Size, longevity, patient concerns.

UBC Operative teaches complex amalgam restorations.
Complex Composites are taught in Integrated Care Clinics on a case-by-case basis.

LLU The majority of complex posterior restorations are done with amalgam. Crown buildups are done with either amalgam or Luxacore/SE Bond adhesive.

UNLV The materials used for posterior complex restorations are: Amalgam, Resin-based Composite, Lithium Disilicate, and Noble Metal. The selection criteria depends on the functional and esthetic requirements of the patient.

ROSE Amalgam, composite, indirect inlay and indirect onlay (comp and porcelain)

UOP Need to define “complex”.

UCSF Amalgam, Composite, Indirect restorative materials
Criteria: Restoration size, loading forces, root canal treatment, patient preference, isolation, caries incidence.

USC We don't do too many complex large direct composite restorations. Composite onlays had been the primary restorative material for posterior complex restorations. If isolation becomes a problem, we'll switch to indirect cemented restorations.

WUHS Composite and Amalgam. Pre-existing undercuts will lend to amalgam, but primarily use composite.

UW For complex posterior restorations, amalgam is our choice for direct restorations; gold is the choice for indirect restorations. It depends on the size of the cavity and the occlusion.

OHSU Material choice depends on occlusal habits, reduction considerations, opposing dentition, isolation, oral hygiene, patient values. Material choices: amalgam; gold and ceramic for onlays; gold, PFM, metal free materials for crowns (Feldspathic, EMax, Zirconia) We use Optibond FL adhesive with Z100 composite for complex posterior restorations.

Selection criteria

- tooth (pre-molar vs molar)
- size of lesion (partial or full coverage)
- cusp involved (functional vs non-functional)
- parafunction
- esthetics
- cost

- patient preference

We use Optibond FL due to its history of success in clinical studies. We use Z100 for similar reasons, and because it is very strong and tough and has pretty high wear resistance. We do not provide many complex composites, and still rely on amalgam in many situations. We take a fairly conservative view toward composites, limiting them to non-cusp replacements generally, but for sure non-functional cusp replacement.

UCLA For complex posterior restorations, we use amalgam for direct restorations, but for indirect restorations, we use gold, PFM, or ceramics. But they are all dependent on clinical judgment such as caries risk, parafunction, occlusion, patient history, etc. Composite is also given as an option, but the patient is informed of the minimal longevity of large composites.

12.) How often are onlays provided as treatment vs full crowns?

UA The decision is driven by the clinical situation and we don't track any percentages at this time.

ASDOH There more Crowns treatment planned in the clinic than Gold onlays

MWU Approx. 2% Hope to ramp up dramatically – we are raising costs of composites, lowering full ceramic. Two-fold benefit: Will encourage CAD/CAM and better restorations. Will encourage more onlays, fewer crowns, and hopefully more inlays/onlays rather than huge composites.

UBC Onlays comprise 5% of all indirect single-tooth restorations in our clinic, 92% metal and 8% ceramic.

LLU We completed 2152 porcelain crowns and 545 full gold crowns for a total of 2697 full coverage units. We did 14 metallic and 28 porcelain onlays for a total of 42 so only about 1.5% of cuspal coverage restorations were onlays. We did 3 three- quarter gold crowns which was basically insignificant.

UNLV Five percent onlays and ninety-five percent full crowns.

ROSE Seldom if ever

UOP Minimal amount

UCSF UCSF does not have this data.

USC In the indirect restoration category, students do more CAD-CAM onlays than other any other type of restoration. PFM is second. Zirconia crowns third.

WUHS Increasingly with our Planmeca FIT. Our goal is for 25% of all crowns this year in onlay form and E4D

UW It depends on the training back ground of individual clinical instructor. In general, full crowns are provided more than onlays.

OHSU Onlays are encouraged when gingival portion of the tooth has good integrity and the patient has good hygiene. Cast gold onlays were offered more, but within the past 3 years, we have moved toward ceramic onlays. However, our statistics state that only 2% of coverage restorations are onlays vs. crowns.

UCLA When restoring a tooth with an indirect restoration, we strongly promote the most conservative restoration that will accomplish the task, whether it is an inlay, onlay or more extensive partial veneer restoration, either gold or ceramic material. We are committed to the philosophy of conservation of tooth structure. To encourage this, we implemented awarding students with double RVUs (required points for graduation) who choose to do partial veneer indirect restorations vs. full coverage restorations, and it seems to work well. The ratio of partial to full coverage is about 1:4.

13) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

UA Not at this time.

ASDOH We use Dycal, MTA and Endosequence

MWU No

UBC “No we are not, but it would be nice to hear what other schools are doing. She would appreciate hearing back after the meeting”

LLU Bioactive restorative materials are not currently used clinically for enamel remineralization. MI Paste is used for E1/E2 enamel lesions.

UNLV We recommend MI Paste Plus (GC).

ROSE Remineralization – don’t know. I know that Prevident 5000, MI paste, etc., are being prescribed but there is no formal protocols or appropriate follow-up to evaluate effectiveness

UOP Yes MTA is used for pulp capping procedures, Glass Ionomers are used in advanced root caries

UCSF Fluoride, calcium phosphate

USC We teach students in the lecture but did not implement in the clinic.

WUHS Yes MI Paste

UW We prescribe fluoride 5000 as enamel remineralization material.

OHSU No, we are not using any specific bioactive materials. In Endo, we are using MTA. We may use MI Paste, but not that often. Our pediatric dentistry program is beginning to try Activa restorative. The only reason to not use them is to wait to see what the clinical evidence is, as there is none so far.

UCLA Fluoride treatment, MTA and TheraCal (Bisco) are routinely used for direct and indirect pulp caps.

14.) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

UA Limited use of pins, last resort. Use coves, slots, grooves, etc. to retain large restorations. No amalgam bonding systems at this time are used.

ASDOH We teach amalgam Bond in the didactic operative module. Pins are taught and used in the sim-clinic and they practice placing it on few teeth. I have heard of few occasions where they used pins in the clinic

MWU No

UBC Pins are taught in Operative and used judiciously in Integrated Care Clinic.

LLU Auxiliary retentive features, including pins, boxes, grooves, and slots are used with complex amalgam restorations. Amalgambond is not currently being used. An auto-cure resin bonding system (All Bond) is used with composite buildup cores (Luxacore).

UNLV No response

ROSE We have briefly touched on pins and Amalambond in the past, but there are no plans to introduce pins or Amalgabond in the present courses

UOP No, they were removed from use over ten years ago.

UCSF No

USC No, not at all

WUHS No. As of last year.

UW We still use pin, slot or groove to improve mechanical retention of amalgam restorations. Amalgambond is no longer introduced.

OHSU We are still using Amalgapins and pins (not common).

UCLA Pins are being taught for amalgam build-ups only, especially when placing grooves, slots and potholes do not provide adequate retention. We use the Max021 system, which has a depth limiting shoulder and very favorable stress reduction elements. Bonding is not a predicable replacement for mechanical retention and pins are taught using this advanced system.

15.) Liners, Bases, and Cements. Which ones are being used for what purposes?

UA Gluma as a sealer under amalgam.
TheraCal LC as a liner.
BisCem as a cement

ASDOH 1- Fuji II LC Capsule, restoration classes III, V, restoration of primary teeth and as
a base liner. 2- Fuji lining lc, used as liner
3- Fuji IX , powder & liquid base material in deep class I & II cavities, deep class
V root service restoration. 4- Fuji cement. metal crowns & PFMs crowns & onlays
5- NX3 Nexus for veneers
6- Max Cem Elite for CAD-CAM crowns

MWU RMGI for bases and liners. Theracal and MTA

UBC For direct restorative procedures, RMGICs have been used for liners or bases applications. RMGIC liners should be applied with layers $\leq 0.5\text{mm}$ and not left exposed at the margins due to its lower mechanical properties and higher solubility compared to restorative RMGICs. For base application ($\geq 0.5\text{mm}$ thick), restorative RMGICs are recommended as they have higher mechanical properties and lower solubility, allowing the material to be left exposed at the cervical margin, if necessary. The luting cement used also depends on the indirect restorative material being cemented. UBC Dentistry recommends RMGIC and GIC luting cements, self-adhesive resin cements, and dual cure resin cements combined with dental adhesive, depending on the clinical application.

LLU Ultrablend, Dycal, and Vitrebond are used in direct and indirect pulp caps. Routine basing to ideal is no longer being taught; however, a glass ionomer sandwich technique is taught when lesions are in close proximity to the pulp.

UNLV MTA and CaOH are available for pulp capping. VitaBond (3M) is commonly placed over pulp capping materials as a liner/base. VitaBond may also be used for thermal insulation under metallic restorations. Basing preparations to ideal form for direct restorations is generally not practiced. Cements, e.g., RMGI or Resin may be used to blockout undercuts for crowns or onlay preparations.

ROSE Liners – indirect pulp caps and some minor direct pulp caps – GI or RMGI

Bases – GI or RMGI

Cements – IRM – some doctors prefer for bases

Dycal – some doctors still prefer for direct pulp caps and indirect pulp caps

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The time, effort and expense involved in placing an RMGI liner in these moderate-depth RBC restorations may be unnecessary, as the representative liner used did not improve hypersensitivity outcomes.

There is still intermediate use of liners such as Vitrebond for restorations in the deeper one third of the dentin.

UCSF Liners & Bases: Used for pulpal protection and “indirect pulp caps” over affected dentin or caries

Cements are used only for cementation of extracoronary restorations

Fuji II LC and Fuji IX are used for provisional restorations and sometimes as core buildups or final restorations for Class V lesions

USC Dycal is still the # 1 choice for undergraduate students to use in a direct pulp exposure situation. Not because it is the latest or best material to use for that purpose, simply because it is least technically difficult to use for dental students.

In non-exposure situations, a 4th generation bonding agent is used directly on the dentin surface either to seal the dentin or for dental bonding before the build-up or base up.

-GI liners are used for temporary or permanent sealing of gutta percha in endodontically treated teeth, or the covering of “affected dentin” after caries removal.

-Composite base-ups are used all the time under CAD-CAM onlay preparations, to block out undercuts, to round off the internal surface and to control the thickness of the onlay for light cure bonding.

IRM or ZOE are very rarely used, except in emergency clinic, where some faculty favors the material.

WUHS Fuji LC II/Vitrebond Liners, Vitrebond/Fuji LC II/Composite Bases,

RelyX/Composite Cements for Crowns

UW For direct/indirect pulp capings, Calcium Hydroxide (Dycal) and RMGI (Fuji Liner LC) are used.

OHSU We use the three of them:

Glass Ionomer or CaOH Liners are applied only to dentin walls that are nearer the pulp.

We use calcium hydroxide for direct or indirect pulp cap.

RMGI is used as a base for indirect pulp cap, tooth build up, or to even out a floor to receive amalgam.

Resin reinforced cements are used for indirect restoration cementation

Depending on the intention to bond, we are also using Panavia and Variolink.

UCLA We use Dycal/MTA, TheraCal for direct/indirect pulp capping. We use Fuji Lining LC for liners, and RMGI/GI for bases (Fuji II LC/Fuji IX GP) and GI/RMGI cements (Fuji 1, Fuji Plus).

III. Student/Program Assessment

1.) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

UA No. The leadership has no interest in this idea at this time.

ASDOH We do not use production as a method to evaluate the students & the faculty. We are a teaching institute and we want to make sure that the patients are getting the best care & the students are getting the best education.

MWU Yes, we reward based on number of procedures and not production. It increases the number of experiences the students have.

UBC CPV's are used as a management tool. No marks are assigned to eliminate competition and cherry picking. We maintain an equitable patient distribution.

LLU Neither faculty or students are evaluated or rewarded based on clinical production.

UNLV Faculty are not evaluated or rewarded based on clinical production.

Forty percent of student clinical grades are based on clinical production. Sixty percent is a "Mentor" evaluation of the clinical faculty who routinely instruct and mentor the student. The clinical faculty meet at mid-semester and end of semester to determine the Mentor portion of the grade. Clinical production should be a consideration in assessment, but not the overriding factor. The quantity of production may not translate into quality, however, efficient use of time, motivation, organizational skills and ability to manage patients are also important proficiencies for dentists.

ROSE Production points are not yet utilized, but the Dean is encouraging that as one method of evaluation I think it a valid measure if for no other reason than to push the students to increase production – but not for rewards other than to better prepare them for effective practice after dental school

UOP No. May result in over diagnosing / over treatment

UCSF Production is one of the metrics used in order to assess overall exposure to clinical procedures and ability to efficiently and effectively utilize their time in clinic. Our graduates should be prepared to enter private practice, community clinics, or residency on the day of graduation, and this means that efficiency must be assessed. Production is reflective of the student's ability plan, prepare, and execute treatment efficiently. Going above and beyond the production goals does *not* earn honors, as we do not wish to promote unethical behaviors

USC No. Neither faculty or students are rewarded for production in USC. I do not think this is a valid method for assessment. About 10 years ago, we had tracked the production between group practices and one pair of group practices produce much more than other group practices. In general, the situation was perceived among faculty as the result of inconsistency in the philosophy in treatment planning of the group practice directors. There were never any rewards for the situation.

WUHS Students are looked at on production in one of our groups. Yes. That's how they are judged when they leave.

UW No, our students are evaluated / rewarded based on the amount and the quality of their clinical procedures. The faculty are also not rewarded based on clinical production.

OHSU No—the students themselves are motivated by their own production with regard to gaining experience and meeting threshold levels to be able to challenge competencies. There has been discussion, but the only reward for the student has been toward a higher grade (grade can be moved up in some courses for completing more procedures). It may motivate the student to accomplish more, but there is a concern for ethics. We don't think that simply assessing on numbers is valid, and in fact have moved away from a DVU system for this reason. However, the positives of rewarding is providing an incentive for students to see their patients regularly, and to enhance clinic revenue. The negatives might be that it makes the students treat the patients more as a commodity and there is competition (which may be healthy or unhealthy) between students and the practice groups.

UCLA No. There are no rewarding mechanisms for increased clinical production. When treating clinical patients it is important to stress quality and rewarding production could compromise quality. However, this could be an outstanding program to incentivize part-time faculty and students. Tuition forgiveness and faculty bonuses would be a legitimate motivator to increase production and quality.

2.) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

UA The U of A in 2010 made operative a discipline of Restorative Dentistry. Restorative dentistry include FLD, RPD, Implants and Operative. From our experience “What's in a name?” What matters is the resources that are available.

ASDOH No responses

MWU No – just another skill set

UBC Operative Dentistry should retain its own identity and its own discipline because it comprises the core of general dentistry. Operative dentistry combines applied knowledge of basic disciplines as cariology, dental anatomy, dental materials, and histology; as well as clinical

LLU We have recently (since July 1, 2015) implemented the Division of General Dentistry, and as such, our previous Department of Restorative Dentistry is no longer a separate disciplines as single unit fixed prosthodontics, occlusion, along with extensive direct restorations and cores. Clinical assessment and treatment (surgical and/or medical) of incipient caries lesions, direct and indirect single-unit restorative procedures, and material optimal placement techniques are fundamental components of Operative Dentistry. Thus, Operative Dentistry knowledge and clinical application can be regarded as the core basic education for any dentistry and should be kept as its own discipline in order to graduate student fully capable for general dentistry practice. UBC Dentistry is integrating Operative Dentistry, Prosthodontics, Occlusion and Dental Materials in one single discipline, Restorative Dentistry. Even though the integration is desirable to graduate a dentist with a broader and comprehensive view of Restorative Dentistry, Operative Dentistry identity can be kept and strengthened in teaching and practicing limits.

UNLV Historically, operative dentistry included direct restorations, inlays and onlays. This is still the bulwark of a general dentistry practice. Besides these procedures, Summitt's Fundamentals of Operative Dentistry 4th Ed. – A Contemporary Approach includes: Restoration of Endodontically Treated Teeth, Porcelain Veneers, and Anterior Ceramic Crowns and Tooth Bleaching. Sturdevant's Art and Science of Operative Dentistry 6th Ed. includes splinting teeth with resin-based composite. Additional considerations would be pit and fissure sealants and resin infiltration.

ROSE I am not clear on what is meant by "identity". We are a general practice model here at Roseman so there are no specialty departments. We are integrating operative with fixed and crown and bridge and other restorative disciplines. We feel that this is a better way for students to grasp the whole picture of general practice and better patient care. There continues to be a huge need for operative and restorative procedures regardless of those "pioneers" who imply that we can resolve our dental problems and needs with other than surgical methodologies. Operative dentistry is not going away

UOP At Pacific we use the term "Operative dentistry" is embodied in the terms "Restorative" and or "Reconstructive dentistry". We do not have separate departments such as "Operative, Crown & Bridge, Implant, and Removable Dentistry". All of the Singular domains are within the overall sphere of the Department of Integrated Reconstructive Dental Sciences. There are continual sessions of crosstraining designed to calibrate faculty in the domains. Our goal is to train the students to be knowledgeable in the overall scope of dentistry such as they will be called upon to provide in private practice.

UCSF UCSF is not concerned about the term "operative dentistry". This term is used interchangeably with "restorative dentistry".

USC We've just switched back to a group practice module this month, after over 10 years of "discipline based teaching". But our dean was adamant in retained the discipline teaching within the group practices simply because he felt there is value in keeping the fixed pros, operative, removable specialty and faculty in place.

WUHS Conservation of Tooth Structure, Cariology/CAMBRA, Dental Materials, Radiology, Dental Anatomy.

UW In our school, Operative Dentistry is defined as “intracoronal restoration procedures” including direct and indirect restorations. In some circumstances, the intracoronal restoration procedures need more sophisticated skill levels than extracoronal restoration procedures. Thus, we think Operative Dentistry should be still retain its own identity.

OHSU I think it always will because most dentists will do more “operative” direct restoration procedures than anything else most likely. Pros is not likely to claim direct fillings.

UCLA UCLA recently has undergone Division/Section restructuring. Up until 1998, there were separate sections of Operative Dentistry and Fixed Prosthodontics, and they were combined into a Division of Restorative Dentistry. Recently, Restorative Dentistry was combined with Endodontics and Periodontics to form a Division of Constitutive and Regenerative Sciences. Regardless of changes in names and structuring, Operative Dentistry is a discipline that should be taught in the school, both conceptually and practically, and it is still taught in the class as well as in the clinics. Operative Dentistry should include all the fundamental knowledge and techniques related to the practice of general dentistry. We encourage faculty and students to become members of the Academy of Operative Dentistry, and currently maintain 100% membership amongst full time Restorative Faculty and have approximately 60 student members each year.

3.) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

UA No Boards! Students are required to pass competencies in many areas before graduation

ASDOH We host the WREB & ADEX

MWU WREB and ADEX – state driven so we will offer what our students need.

UBC N/A

LLU Mock boards are conducted during the D3 and D4 years. A board-qualifying exam is required prior to students being allowed to participate in a regional board exam. The WREB exams are hosted twice/year; implementation of the California portfolio is being considered.

UNLV We administer clinical mock board examinations that simulate dental licensing board examinations. We host both WREB and ADLEX licensing examinations. We are not considering alternatives. However, we teach students how to build a portfolio.

ROSE We continue to host clinical board exams. We are also looking into portfolio assessment as independent performance assessment (IPA) so that we are prepared should competency by portfolio become acceptable by state boards for licensure. UOP’s success and publicity regarding their two students obtaining licensure this year may cause other states to seriously consider it. We think it makes a lot of sense.

UOP Yes We graduated the first student in California to obtain licensure by Portfolio. Traditional board exams such as the WREB will most likely be around as they function as Regional exams providing multi-state licensure.

UCSF Traditional board examinations (WREB) are still supported at UCSF. A new pathway to licensure, the California Dental Board Portfolio Examination, has been introduced.

USC We still host the WREB exam three times a year. The only alternative is the California portfolio licensing program, which we are still working to make it happen.

WUHS Yes, we do most a traditional clinical board exam and yes we are. Whatever is nationally being discussed.

UW We still host a traditional clinical boards exam. It takes time and efforts to find good candidates of the patients. But it can test the true level of the students' clinical competency.

OHSU Yes, OHSU has a Mock Board week—we examine the students in Operative and Perio patient based procedures. If the exam is passed, the students may use the results as clinical skills assessment (competency). Part of our board exam (removable and Endo) is non-patient based, but operative is still patient based. I think we will switch if the regional boards switch. Also, an alternative might be no board, where the regions trust the schools to certify the students as competent based on their body of work. We are hoping for this.

UCLA We still hold a WREB exam, and we are currently not considering moving away from this process. We have also adopted the California Portfolio pathway to licensure, but in the first year there are only two students who have chosen this option.

4.) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona's Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

UA Limited use at this time but we are working at widening this use of this technology in the future.

ASDOH We started using the Prep-check this year but we do not use it for grading it is just another tool to help the students evaluate themselves.

MWU Yes more widely. But not fully integrated, used more as a tool this time. Evaluating for future grading.

UBC We consider the overall student experience, no competency exams on patients.

LLU We are not currently using digital imaging for student project grading. This is possibly the future for laboratory grading of students' projects.

UNLV N/A However, we are seeking simulation lab alternatives with box scanners and a new analysis software from 3shape.

ROSE We have had some problems with the Compare software – but our bigger problem has been faculty to develop and direct CAD/CAM curriculum. This year we have designated a faculty member to assume that role and are confident that we will show much progress with all elements of CAD/CAM digital dentistry. It is our belief that the area of digital dentistry is the coming thing and that eventually all of our students will need to be competent in diagnosis, treatment planning, scanning, and design – and other areas of digital dentistry before they leave dental school. This year we are placing computers and scanners in the clinics (few faculty

and fewer students are trained and ready to use this technology) with the intent of moving forward as quickly as we can.

UOP We are not there yet.

UCSF Digital imaging for student project grading has not been implemented at UCSF.

USC We do not use digital imaging grading. Faculties still believe using instruments to measure and grade fixed and operative projects.

-I believe that computer-aided evaluation is inevitable. First reason is that grading is so intense and time consuming and needs a lot of man power. Every time there is grading after an exam, teaching is compromised because most of the faculty is grading instead of teaching. Second is calibration. One of the most difficulty things in teaching in the sim lab and the clinic is faculty calibration. It is a constant and never ending process, and if we stopped doing it, the consistency in grading can fall apart in a very short time.

WUHS It has progressed and we start this in earnest in two weeks. We use Compare. It is in its infancy and will need considerable development before widespread use. Compare is listening, as I spoke with their lead designer last week. We look forward to its adoption as it will positively transform the faculty-student interactions.

UW We do have E4D Compare software, but mainly use for assist students' self learning and practice. The grading still relies on the instructors and TAs.

OHSU We are beginning to use Prep Check. It is too early to make any comments. We are hopeful this will provide a nice adjunct that allows students to improve their skills even in the absence of direct faculty oversight.

UCLA N/A

5.) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a "one and done" approach? Please provide rationale for the choices.

UA There are multiple competencies. For instance for operative, students must complete a class 2 amalgam, class 2 composite and an anterior composite.

ASDOH In the pre-clinic we have progress exams to assess the student for each module. Course director and assigned faculty grade these exams. Also there is a pre-clinical competency by the end of D2 year. In the clinic we have essential experience that can be graded by the CCU director, specialty director or an adjunct faculty. Our curriculum is competency based curriculum, we have a competency clinic where different faculty are assigned every day to supervise this clinic and grade the students. Every student is graded by 2 faculty members who could be 2 CCU directors or specialty directors.

MWU investigating

UBC We consider the overall student experience, no competency exams on patients.

LLU Competency exams are part of a student's graduation requirements. Prior to partaking of a competency exam in a particular restorative procedure, a defined number of said procedures have to be completed. Two

clinical faculty grade each competency and if there's a significant difference in the grading, a third faculty is called upon to grade that particular component where the difference occurs.

UNLV In operative dentistry, students are required to pass clinical competency exams of Class I, Class II amalgam and resin-based composite, also a Class III resin-based composite. The evaluators are two floor faculty for the competencies. Besides these competencies, students must also pass a mock board requirement that includes a Class II and Class III restoration on patients in the fall of the DS4 year. The mock board evaluators blind grade the procedures in a different location. The mock board is a requirement – not a competency. In addition, the DS4 students are required to do a Class II or III that is blind graded in the Spring. This additional restoration is an attempt to keep them busier in clinic. More blind graded restorations in the DS4 year may be added in the future.

ROSE In our pre-clinic courses we have evolved from the “one and done” method to the practical assessment with remediation and re-assessment. For the past two years there has been either a post course case based practical which required the student to develop a treatment and then complete the treatment on a simulator over a 5 day period. This last year D2 students were in a year-long case based course where they were required to treat diagnosed treatments on the simulator.

There was also a “Capstone Assessment” at the end of the course. We feel that the “year end” assessment is not only essential but that the students really like the experience. Formative daily evaluations are completed for each clinical procedure. A summative independent performance assessment (IPA) is completed by student and clinical faculty

UOP Students take a number of both formative and summative examinations over their two year clinical program. These are graded by two faculty assigned to their group practice. During the Winter and Fall quarters they participate in summative (board simulation exams) in Operative Dentistry and Fixed Prosthodontics. We use multiple assessments rather than a one and done. Our rationale is that we want students to demonstrate a progression towards competency and independent clinical decision making.

The number of Competency exams are:

Operative During their second year:

Name of Examination	Type of Examination	Number
Preparation and Restoration Competency (operative)	Formative	2

Operative and fixed During the first half of their Third year:

Name of Examination	Type of Examination	Number
Preparation and Provisional Restoration Competency (fixed)	Formative	2
Final Impression Competency(fixed)	Digital Formative	1
	Implant Formative	1
	Conventional Formative	1
Crown Delivery Competency (fixed)	Formative	2

Preparation and Restoration Competency (operative)	Formative Winter SCE	2 1

Operative and fixed During the second half of their Third year:

Name of Examination	Type of Examination	Number
Preparation and Provisional Restoration Competency (fixed)	Spring SCE	1
	Summative	1
	Portfolio Style	1
Final Impression Competency (fixed)	Summative	1
	Portfolio Style	1
Crown Delivery Competency (fixed)	Summative	1
	Portfolio Style	1
Preparation and Restoration Competency (operative)	Spring SCE	1
	Portfolio Style	2

Removable During their Third year:

Name of Examination	Type of Examination	Number
Case Design and Final Impression Competency	Formative	1
	Summative	1
	Portfolio Style	1
Jaw Relations Competency	Formative	1
	Portfolio Style	1
Wax Try-in Competency	Formative	1
	Portfolio Style	1
Delivery Competency	Formative	1
	Portfolio Style	1

UCSF Third year operative competency exams include Class II and Class III/IV. These are graded only by coaches (group leaders). Fourth year operative competency exams include Class II and Class III/IV. These may be single examiner (only by the coach/group leaders) or two-examiner if the student wishes to obtain a license through the Portfolio Examination pathway in California. Examiners are general dentists and prosthodontists.

In addition to competency exams, daily assessment and longitudinal progress supervised by one consistent general dentist or prosthodontist coach is also used in course grading. It is well-documented that multiple assessments of directly observed experiences increases validity of the assessment, therefore the competency exams are not used in isolation for course grading and assessment of student readiness.

USC In USC, we have qualifying and competency exams for fixed (fpd & implant), operative (class II, III, V), removable, treatment planning & perio. Qualifying exams (QE) are like junior exams. Competency Exams (CE) are senior exams. Students get signed out of fixed and operative if they completed all their exams. Before

this month, only designated faculty can supervise and grade clinical exams in fixed and operative. After Sep 1, 50% time or more faculties could supervise the exam in the “group practice module”.

-There is only one grader for each exam. We tried two graders in the past to cover fixed and operative exams and every time it did not last due to 1) Lack of man power 2) Faculty scramble to double grade, especially at the end of the exam.

WUHS

Periodontal data collection

Diagnosis and treatment planning of pediatric patient (IPCE or SCE)

Periodontal assessment and treatment planning

Diagnosis and treatment planning (ePortfolio)

Class II Composite

Class II Amalgam (SCE)

Class III Composite

2+ surface direct restoration or SSC on pediatric patient

Single unit indirect restoration (cast metal or bonded)

Mock WREB Restorative Component

Treatment of edentulous patient using removable prosthodontics (portfolio)

Treatment of partially edentulous patient using removable prosthodontics (portfolio)

Replacement of teeth (OSCE)

"Clinical Examination

(IPCE unless otherwise noted)"

Scaling and root planing

Mock WREB Periodontics Component

Root canal therapy on any permanent tooth

Mock WREB Endodontic Component

Oral med/oral path patient cases (SCE)3

Nonsurgical extraction

Assess and treat emergency dental patient

Malocclusion and space management (OSCE - administered in ECD)

Occlusal analysis and adjustment (SCE)

Who grades/evaluates the performance exam?

Faculty covering the clinic or assigned to grade.

Are their multiple assessments or a “one and done” approach?

One and done with breadth required.

UW In our new curriculum, there are two components of student assessments – didactic and clinical performance. Didactic performance is evaluated by the students’ written or oral test and case presentations. Clinical performance is evaluated by the students’ daily clinical performance and also competency examination at the end of the year.

OHSU Operative Class II in amalgam and composite, Class III, Caries Risk Assessment. Crown preparation and cementation, RPD design are the restorative competency/performance exams. At least two faculty are the graders. We are changing the name to Clinical Skills Assessments. Students may remediate a failed

competency/skills assessment. With our changing clinical curriculum, we will still have these assessments counting toward their overall progress toward graduation. There are multiple evaluations that lead up to the student readiness for the clinical skill assessment exam.

UCLA At the pre-clinical level, we have a total of 11 competency exams (6 exams for operative and 5 exams for fixed). These preps are checked and graded by preclinical faculty teaching members followed by final review by the course chair to meet consistency in grading.

At the clinical level, when they have minimum experiences in various procedures, we have 9 clinical competency exams including direct and indirect restorations.

Finally, we have a “capstone” comprehensive Clinical Competency Examination which involves diagnosis, treatment planning and one more practical examination.

IV. OTHER

ASDOH Do you teach using jet acrylic (methyl methacrylate) or Snap (ethyl methacrylate) for making provisionals in the preclinic and/or the clinic, what is the percentage of using it in the clinic and if you do, do you teach both direct and indirect technique.

ROSE Question regarding CAD/CAM: For the schools who have had CAD/CAM technology with the capabilities to mill restoration on site, has that lowered the cost of single unit indirect restorations and have anticipated economic benefits been realized?

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

No Regional Agenda Items Submitted

Consortium of Operative Dentistry Educators (CODE)



REGION II (MIDWEST) ANNUAL REPORTS

Region II Director:
Christa Hopp
SIU
Alton, IL

Region II Annual Meeting Host:
Dr. R. Scott Shaddy
Creighton University
2802 Webster St.
Omaha, Nebraska

Region II Annual Report Editor:
Dr. R. Scott Shaddy
Creighton University
2802 Webster St.
Omaha, Nebraska

CODE REGIONAL MEETING FORM

REGION: 2 (Midwest)

LOCATION INFORMATION FOR 2015 REGIONAL MEETING

University: Creighton University School of Dentistry

Dates: September 24th and 25th, 2015

Chairperson: Dr. R. Scott Shaddy

Phone # 402-280-5226

University: Creighton University

FAX # 402-280-5094

Address: 2802 Webster St.
Omaha, NE 68131

E-mail RAYMONDSHADDY@creighton.edu

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

1. Bleaching – carbamide peroxide as caries control
2. Teaching caries removal – remove it all, leave some
3. MI paste – re-calcification uses
4. Do you have students polish amalgam?
5. What algorithms, methods, and cut offs are used to evaluate students in preclinical and clinical?
6. Do students receive a grade or pass/fail?

LOCATION INFORMATION FOR 2016 REGIONAL MEETING

University: University of Iowa

Dates: TBD

Chairperson:	Deborah Cobb	Phone #	319-330-2766
University:	University of Iowa College of Dentistry	Fax #	
Address:	801 Newton Rd., Iowa City, IA 52242	E-mail	deborah.cobb@uiowa.edu

Please return all completed enclosures to;

Dr. Edward J. DeSchepper, National Director	E-mail: edeschep@uthsc.edu
UTHSC College of Dentistry	Phone: 901-448-7686
875 Union Avenue	Fax: 901-448-1625
Memphis, TN 38163	

DEADLINE FOR RETURN: 30 Days post-meeting

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 REGIONAL ATTENDEES FORM

REGION: 2 (Midwest)
2014 University of Minnesota

NAME	UNIVERSITY	PHONE #	FA X #	E-mail
Christa Hopp	Southern Illinois	618-174-7052		chopp@siue.edu
Ana Elashvili	University of Colorado	720-255-7047		ana.elashvili@ucdenver.edu
Karine Barizon	University of Colorado	303-810-8839		KARINE.BARIZON@UCDENVER.EDU
Deb Cobb	University of Iowa	319-330-2766		deborah-cobb@uiowa.edu
Bill Johnson	Nebraska	402-472-9406		wwjohnson@unmc.edu
Gary Stafford	Marquette	414-288-5409		gary.stafford@marquette.edu
John Purk	University of Missouri/Kansas City	816-235-2168		purkj@umkc.edu
Mark Belcher	Southern Illinois	618-474-7063		mbelche@siue.edu

A. Patrick Lor	Marquette	414-288-6610	alfred.longo@marquette.edu
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**2015 NATIONAL CODE AGENDA
REGION II
SUMMARY RESPONSES TO NATIONAL AGENDA**

(Editor Note: Questions condensed for printing purposes)

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

No Summary Responses Submitted

2015 NATIONAL CODE AGENDA
(Evidence cited where applicable)
September 24-25, 2015
Report on the proceedings of CODE Region II
DeSchepper ED (ed.) Code Regional Annual Reports 201
<http://www.unmc.edu/code/>

Region II School Abbreviations

COLO University of Colorado	MINN University of Minnesota
CREG Creighton University	UMKC University of Missouri - KC
IOWA University of Iowa	UNMC University of Nebraska
UMAN University of Manitoba	SASK University of Saskatchewan
MARQ Marquette University	SIU Southern Illinois University

I. Admissions and Retention

- 1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

COLO: The graduation rate in our school is high. We have increased class size and changed the admissions process to admit a more diverse population of students.

The first time pass rates for 2014: NB I - 97%; NB II - 98%; CRDTS - 88%; WREB - 98%.

The first time pass rates for 2013: NB I - 95%; NB II - 94%; CRDTS - 87%; WREB - 100%.

We have not had anyone that has not eventually passed the National Boards.

CREI: Yes, per Associate Dean for Admissions and Student Affairs who chairs the Admissions Committee

IA: Yes, evidence by successful performance and graduation of students

MARQ: Yes, we feel our Admissions Committee does a good job of selecting students that will succeed in the profession. Our students consistently demonstrate high pass rates on NDBE Part I, NDBE Part 2, and regional licensure examinations.

MINN: The perspective from the Division of Operative Dentistry is “Yes.” With 100 students in each dental class, it is remarkable that failing out of Operative Pre-Clinic or Clinic is rare. The qualifications of the entering dental students can be attributed both to candidate self-selection and the admissions process. Self-selection implies that, before applying, students have already made a decision on their own suitability—and the high cost of the application process and tuition may have a tendency to discourage candidates without good prerequisite skills and abilities.

NEBR: Yes.

- a. The evidence would be the high pass rates of our students on Part 1, Part 2 and the Clinical Board Examinations.
- b. Additionally, typically a graduating class from UNMC has 20% matriculating into postgraduate residency programs, many students which are accepted into the top ranked schools in the Match Program.
- c. The feedback of U.S. Military Scholarships programs on UNMC COD has historically been very positive and accounts for the high percentage of UNMC COD students being accepted for military scholarships.
- d. UNMC COD dental scholars graduate. Rarely does a student who matriculates in our dental program not graduate.
- e. 100% of our dental students are members of ASDA. Many of our students are actively engaged, oftentimes holding offices at state, regional and national levels. Many of our students go on to become leaders within the local and state organizations.

SIU: Yes, our graduation rate is high, 95-96%.

UMKC: Yes. We have a retention rate of 97%. Our first pass rate is above the national average on National Boards Part 1 and 2. Have above 94% pass rate on most sections on WREBS.

- 2) Is the applicant’s dexterity evaluated as part of the admissions process? Do you feel it should or shouldn’t be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

COLO: In our school there is a bench exam for the advanced standing student program, but not for the dental student program. We believe that a bench exam might not be predictable, since the applicant can prepare well to perform a specific project and succeed in the admission. It is very hard to accurately measure applicant's dexterity and predict their success in dental school. Not all the advanced standing program students have an exceptional hand skills, some of them are still struggle in clinic; however they all passed the bench exam.

CREI: The Associate Dean for Admissions and Student Affairs feels it should be evaluated

IA: No, Portion of DAT has spatial perception but not dexterity. Although it would be helpful to evaluate dexterity it is not practically feasible.

MARQ: Generally speaking, an applicant's dexterity is not evaluated as part of the admissions process. We do not feel dexterity should be evaluated as part of the admissions process. It would be burdensome to our faculty/staff members; that is, and we perceive it as a "high investment" with "minimal gain" benefit. Approximately 10% of the incoming D1 class enrolls in a summer course (prior to beginning the D1 year). This group of students is selected based upon risk factors for potential academic struggles during the D1 year. This course is essentially a first semester D1 preview course. Students are taught many dental fundamentals, including dexterity fundamentals. Acceptance for this group of students is conditional on successful completion of this course. Historically, all students "pass" the course.

MINN: The Dental Admissions Test measures 2-D and 3-D perceptual motor ability. The candidates application will include courses and hobbies that indicate a propensity for manual dexterity. No objective dexterity test or simulation exercise is employed. There is research that suggests manual dexterity tests, such as chalk carving, are not good predictors of student success in preclinical Operative Dentistry. E.g., Gansky SA, Pritchard H, Kahl E, Mendoza D, Bird W, Miller AJ, Graham D. Reliability and Validity of a Manual Dexterity Test to Predict Preclinical Grades. JDE 2004; 68:985-994. Research also suggests computerized dental simulators, such as DentSim, are not good predictors of success in preclinical Operative Dentistry. E.g., Urbankova A & Engebretson SP. Computer-Assisted Dental Simulation as a Predictor of Preclinical Operative Dentistry Performance. JDE 2011; 75:1249-1255. Research also suggests multiple choice perceptual ability tests, such as found in the Dental Admissions Test, are also not good predictors of success in preclinical Operative Dentistry. E.g., Oudshoorn WC. The utility of Canadian DAT perceptual ability and carving dexterity scores as predictors of psychomotor performance in first-year Operative Dentistry. JDE 2003; 67:1201-1208.

NEBR:

- a. UNMC COD does not have a process by which an applicant's dexterity is evaluated at the time of the interview/admission process. While this evaluation method has been discussed off and on over the years, it has been difficult to reach consensus on the committee on how best to proceed with the process of evaluation and the methods used to test for dexterity.
- b. The high pass rates of our students on the clinical licensure examination (CRDTS) has been the reason that many on the admissions committee feels such an evaluation for dexterity
- c. Historically, incoming D1's are immediately immersed in the Dental Materials preclinical laboratory.

SIU: No, but the idea has been discussed in committee. There are currently no plans for implementation of a dexterity evaluation for our undergraduate students. We are initiating an international student program this year that will utilize a dexterity evaluation that may serve as a litmus test for future applicants.

UMKC: No. Dexterity can be learned and developed. We routinely see students who are poor and develop to be very good.

- 3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

COLO: Occasionally we have a student that is not well suited to become a dentist. Constant changes are made on admissions process to try to identify potential risks factors. However, choosing candidate is very challenging process and we can't predict all the factors the students will face to overcome during dental school.

CREI: No. Negative behavioral, ethical, or moral traits would exclude an applicant from admission. Marginal academic achievement might place an applicant in a pre-admission program to see if the applicant could demonstrate substantial improvement.

IA: Rarely but yes. Unfortunately, we find this out after the fact and then we try to remediate for innate abilities. Certain behavior can be modified (school psychologist, counseling) but cheating, plagiarism, merits dismissal.

MARQ: Yes. Our committee has admitted students who ultimately prove to be ill-suited for success in the profession.

Examples include: (a) a very bright/intelligent student who is less concerned with patient care outcomes than meeting a given requirement (b) a student with superb technical skills who lacks critical thinking skills, independence and the ability to apply basic dental principles to any non-ideal dental scenarios (c) a very intelligent student with ethical issues.

See question #4 for additional information (RE: dismissals).

MINN: This question is difficult to answer because it depends on how one would measure these "abilities" and assess our success. Regardless, any measure selected would undoubtedly show the vast majority of our students are well suited for the profession. Our interviewing method/criteria allows us to look at applicants in a holistic manner. This includes non-cognitive factors such as ethical behavior, teamwork, the ability to navigate situations, as well as, cognitive factors such as GPA and DAT.

NEBR:

- a. The admissions committee makes every effort to offer acceptances to those students that have the qualities that will enable to them to be successful not only in the clinical setting, but also in life.
- b. The committee's interview process evaluates and places strong emphasis on non-cognitive variables that enhance academic success in the rigorous dental curriculum as well as becoming a successful clinician following graduation from the dental program.
- c. Background checks are performed on every applicant that matriculates in the program.
- d. There have been occasional offers of acceptance to students that have struggled academically. Most students entered with a high GPA and DAT test scores and oftentimes the issue is a time management/organizational issue whereby the student is not prepared for the significant jump from an undergraduate program into the professional school environment.

SIU: Probably. Every effort is made by our admissions committee to screen students for guaranteed success in dental school but exceptions are bound to occur. Changes and additions to the interview process are constantly being reviewed and improved. However, even if the person that sits before you on the day of the interview would make the perfect dentist, there is still no

way to predict the potential circumstances that each student will encounter and how each will handle the stressors and commitment needed to succeed.

UMKC: YES, but we can't tell up front who they will be.

- 4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

Academic Performance?

COLO: In the last Five years, three students were dismissed from our school, one for behavioral issues and two other for academic performance. At least one student per class repeats the year. Students who repeat the year is due to their poor academic performance.

CREI: This is our only experience of dismissing a student. It will occur if there is repeated substandard academic performance, followed by failure to meet remediation goals. The last dismissal occurred 2 years ago with a freshman student.

IA: Difficult but there is due process through CAPP committee. Within the last 2 years. Plagiarism and academic performance

MARQ: It is somewhat difficult, but not impossible for students to be dismissed from the program. Our school requires clear, consistent documentation of events that would warrant dismissal.

Most recently, a student was dismissed for academic deficiencies in the spring term of 2014. Prior to that (during the same academic year), one student was dismissed for behavioral/ethical reasons.

- A student, with multiple pre-clinical course failures, was dismissed for failure to make reasonable progress toward competency. The student had both patient care deficiencies and displayed continued issue with basic dental science concepts even after multiple remediation sessions in multiple courses.

Three dental students amongst the D1 and D2 years have been asked to repeat the academic year for not meeting performance expectations

MINN: Dismissal is only one of several possible recourses for poor academic performance or behavioral problems. Failing grades or behavioral issues will result in a review by the scholastic standing committee. The committee has several options to offer the student: repeat a course, repeat a year, withdrawal, or dismissal. The Academic Affairs office of the School of Dentistry tells us that the majority of students who are admitted to the program complete the curriculum. Our annual ADA survey numbers indicate that very few students do not complete the curriculum. We have not had a true student dismissal in several years that was brought about by lack of academic performance or unacceptable behavior. We have made

recommendations for two administrative dismissals based upon students not returning from leaves of absences.

NEBR:

- a. UNMC COD has been very fortunate in that an extremely high percentage of our students graduate on time. There are occasional instances whereby a student will have the 4 year program extended to a 5 year course of study. Sometimes the reasons for the extensions are not academic but due to other unforeseen circumstances; family issues, illness, maternity, etc.
- b. One student in the past 15 years has left the program for failing to achieve the minimal academic standards necessary to progress through the curriculum.
- c. There have been a handful of students that have left the program in the past 15 years for a variety of reasons, mainly the discovery that dentistry is really not what they want to pursue.
- d. Fortunately, we have had minimal issues with behavioral issues that would necessitate dismissal from the academic program.

SIU: Our policies include limits to the time allowed to complete the program. The first and second year of the curriculum must be completed within 3 years and the entire program must be completed within 6 years. Dismissal is not common. I am not aware of the last time a student was dismissed. The school generally does everything within reason to help the student succeed. However, issues associated with academic performance and behavior have led to students dropping out in the past.

UMKC: For serious reasons not difficult. ? Academic performance. If they have a GPA of less than 2.5 two semesters in a row or a total of 3 semesters below a 2.5 they can be dismissed.
Academic: 99.5%

Behavioral?

MARQ:

- A D2 student was dismissed from the program after he sent his lab project to an outside lab. He was caught, lied about the violation, and attempted to persuade additional students to lie.

UMKC: Behavioral: 0.5%

Combination of both?

5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

COLO: There is no career counseling or refund on tuition for dismissed students.

CREI: Yes

IA: No

MARQ: No. Our school does not have a formal career counseling nor tuition refund for dismissed students.

MINN: There is always counseling when appropriate and requested. Each case is individual and due to the nature of a dismissal, students may just be too upset to receive advice and counseling.

NEBR:

- a. UNMC provides many resources for our students; counseling, tutoring.
- b. UNMC provides an Academic Success Program within the first six weeks of the program to all D1 and DH3 students.
- c. There are generally no tuition refunds for student dismissals.

SIU: Not specific to the dental school however the main campus offers counseling that the student would have access to. No tuition refund is offered.

UMKC: YES in a practice management course that is part of their curriculum. No tuition refund for dismissed students.

6) Are students' tuition insured? If so, by whom? What is the cost?

COLO: There is no tuition insurance.

CREI: Tuition is not insured by the University. Perhaps the loan agency insures them.

IA: No

MARQ: No. Students' tuition is not insured.

MINN: No

NEBR: Student's tuition is not insured to my knowledge.

SIU: No. Any tuition insurance utilized by our students is not facilitated by our school.

UMKC: No

7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

COLO: School doesn't facilitate transfer of a dismissed student.

CREI: Yes

IA: No

MARQ: No. Our school does not have a formal department to aid in the transfer.

MINN: See answer to I.5.

NEBR: UNMC COD would in all likelihood assist in the process of a student transfer but the ultimate decision would be determined on a case by case basis. Fortunately, UNMC COD does not have to deal with cases of student dismissal resulting in the transferring out of our dental program into other health profession programs.

SIU: No. If a student is dismissed the school does not have any policies for facilitation of transfer. If the circumstances associated with the student leaving the school are not due to dismissal the administration will assist the student with referrals/endorsements as appropriate.

UMKC: We do have an in school counselor and that individual works with students who are struggling about other career options and send them to campus resources on career identification.

II. Materials/Techniques/Curriculum

- 3) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

COLO: Yes. With fine diamond burs, high speed and water irrigation.

CREI: For removal, we use Brassler Dialite red-banded fine diamonds in high speed with water spray. Reference Dr. John Sorensen, University of Washington School of Dentistry

IA: Yes, Use Brasseler red banded fine diamond cylinder bur

MARQ: Yes, removal off bonded ceramic/BruxZir crowns has recently been introduced into the curriculum. Clinically, we have a specific bur block with red-banded diamonds used for removal.

MINN: Crown and bridge procedures are generally taught by the Division of Prosthodontics. However, monolithic zirconia was introduced to the students in the Operative Dentistry IV course [O Zidan] in 2011. Lithium disilicate (IPS e.max) CAD/CAM crowns (one visit) are also taught in an elective Operative Dentistry course [CAD/CAM Restorations, O Zidan]. About 90% of each class takes this elective. In the elective course, students are taught that cutting monolithic zirconia and lithium disilicate restorations is accomplished with fine-grit

diamonds in the high speed hand piece and low pressure. This has carried over into the general clinic.

NEBR: We do not teach that as a preclinical technique. Clinically zirconia crowns are removed much like a gold crown, using a coarse diamond bur. Lithium disilicate crowns need to be ground down basically like doing a new crown prep to remove the material from the tooth.

SIU: Yes. Use of the most coarse diamond bur available is recommended with expectations of needed to use more than one to finish the job.

UMKC: YES

- 4) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

COLO: We do cover some porcelain repair in lecture in fixed course. But we don't have chair side equipment and instructions.

CREI: Yes, Oral Diagnosis teaches this subject. We use the Rondoflex 360.

	2013-2014	2014-2015
SA		25% reduction
Post CR		10% increase

IA: Yes for repair and treatment of internal surface of all ceramic crowns prior to cementation. Not for cavity preparation or prior to sealant placement. Didactic in pre-clinic and practice it in the third and fourth year clinic. No change based on this.

MARQ: No

MINN: No

NEBR: We do not teach air abrasion.

SIU: No

UMKC: No

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?

COLO: About 15% of the crowns are all ceramic.

CREI:	2013-2014	2014-2015
PFM	753	590
ACC	71	312

IA: 40 % ceramic, 40 % pfm, 20 % FGC

MARQ: No answer

MINN: For the academic year 2014-2015 (6/1/14 to 5/31/15), predoctoral clinics produced 2,138 crowns of which 416 (19.5%) were full metal, 1,255 (58.7%) were porcelain-metal, and 467 (21.8%) were all porcelain. In the graduate clinics (Prosthodontics), 413 crowns were placed in the same time period, of which 29 (7.0%) were full metal, 311 (75.3%) were porcelain-metal, and 73 (17.7%) were all porcelain. In the faculty practice for the same period of time, 512 crowns were placed, of which 21 (4.1%) were full metal, 281 (54.9%) were porcelain-metal, and 210 (41.0%) were all porcelain. The PFM crown appears to still be the front runner in all three groups—although among the faculty its lead was the smallest over the second place contender, the all porcelain crown.

Academic Year 2014-2015	predoc dds	faculty	resident
Full metal crowns	416	21	29
PFM crowns	1,255	281	311
All porcelain crowns	467	210	73
Total crowns	2,138	512	413
Full metal crowns %	19.5%	4.1%	7.0%
PFM crowns %	58.7%	54.9%	75.3%
All porcelain crowns %	21.8%	41.0%	17.7%

NEBR: Of all ceramic crown restorations, 76% are Zirconia and 24% are PFM.
Of all crown restorations, 57 % are zirconia, 19% PFM, 24% are gold

SIU: PFM's are still more common than all ceramic crowns in our clinic.

UMKC: non-metal ceramic crowns (30%) vs. PFMs (70%)

What types of cements are being used and where

MINN: A dual cure resin cement (RelyX ARC) is recommended to bond ceramic restorations containing glass, with the exception of veneers. We do not recommend the use of self-adhesive cements (RelyX Unicem2) for glass based ceramics—this is because the dual cure resin cement interface is stronger and may increase the fracture toughness of the restoration. Self-adhesive cement or resin-modified glass ionomer cement (RelyX Luting) is used for cast metal based restorations. A light-cured resin cement (RelyX Veneer, with Single Bond or with Scotch Bond mixed with SB activator) is used for porcelain veneers.

-1) Metal-based

COLO: RMGI (Fuji Plus)

CREI: Fuji Plus

IA: RMGI Fuji Plus

MARQ: RelyX Luting

MINN:

NEBR: Resin-modified Glass ionomer cement (Fuji Plus)

SIU: glass ionomer cement – Fuji I

UMKC: Rely-X (GI/Resin)

-2) Ceramics

COLO: RMGI (Fuji Plus)/Resin (NX3).

CREI: Fuji Plus and/or Resin-Based

IA: Resin cement (Variolink w Ace TE adhesive)

MARQ: Multilink Automix (with Ivoclean)

NEBR: zirconia - RMGI, Lithium disilicate either Resin (Multilink, Nexus or RelyX); or RMGI if pressed lithium disilicate

SIU: resin bonding cement – Multilink Automix

UMKC: Calibra or Panavia

-3) Post & Cores

COLO: RMGI (Fuji Plus)

CREI: Fuji Plus and/or Resin-Based

IA: Resin or RMGI

MARQ: RelyX Luting (cast, titanium, stainless steel), Multilink Automix (Fiber reinforced)

NEBR: RMGI

SIU: glass ionomer cement – Fuji I for metal, resin for fiber posts

UMKC: Panavia or Rely X

-4) Veneers

COLO: Resin (NX3-Kerr)

CREI: Resin-Based

IA: Resin

MARQ: Variolink II

NEBR: Variolink or Nexus

SIU: resin bonding cement – Variolink

UMKC: Calibra

- 4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

COLO: No. We believe composite cannot substitute amalgam in all cases. Also, we do need to prepare our students to practice in different practices and to treat diverse patient population. Even during dental school, students go for rotation to outside dental clinics where they are asked to perform several amalgam restorations.

CREI: No, decision is evidence-based

IA: No, decision is evidence-based

MARQ: No. Our school continues to teach amalgam use. The evidence continues to support amalgam as a viable restorative option (and sometimes the best restorative option).

MINN: No. First of all, there are no controlled studies that demonstrate adverse health effects from placing or receiving dental amalgam restorations. See ADA Statement on Dental Amalgam [<http://www.ada.org/en/about-the-ada/ada-positions-policies-and-statements/statement-on-dental-amalgam>] and Mayo Clinic's Statement on Dental Amalgam [<http://newsnetwork.mayoclinic.org/discussion/amalgam-is-a-safe-and-durable-choice-for-fillings>]. Studies looking at longevity show little difference between dental amalgam and posterior composite resin restorations [Niek JM, et al. Dent Materials 2007; 23:2-8; and Opdam NJM et al, J Dent Res 2010; 89:1063-1067]. However, in a report from University of Texas Health Science Center at San Antonio Dental School, early failure of class II restorations was significantly higher for composite resin restorations than for dental amalgam [Overton JD et al. J Dent Educ 2012, 76:338-340]. Dental amalgam is still preferred when isolation, access, & visibility are not optimal, when occlusal stresses are expected to be high, and when there is little enamel present. Dental amalgam is also more economical than composite resin. The Minnesota Pollution Control Agency working with the Minnesota Dental Association has promoted installation of amalgam separators in waste water lines. This has answered the concerns about environmental impact of dental amalgam use dental clinics and practices.

NEBR: No, we continue to teach amalgam and will continue for the foreseeable future. Amalgam has a proven record, and we have not seen research that indicates we should change.

SIU: No. Amalgam is still taught and utilized as one of our main restorative materials due to resounding evidence of its long-term success and lack of evidence to the contrary.

UMKC: No. Amalgam is better to use in posterior deep restorations than resin composite. Evidence-based

- 5) What is being taught and what is the future of gold as a restorative material in your

dental school? What are you using as a substitute?

COLO: During pre-clinic courses, students are taught gold onlays and full gold crowns. During clinic, students do a good number of full gold crowns, but not many onlays. Full gold crown is the first choice of treatment for second molars, when crown is indicated. Our school only uses high noble metal. In some instances for second molar, full contour zirconia is offered as an alternative to the full gold crown.

CREI:	2013-2014	2014-2015
Nos. of Inlay/Onlay	31	16
Nos. of Gold Crowns	1	0

Substituting with ceramic

IA: Still teach gold (onlays, FGC) using Noble metal. All lab work is sent out. Substitute with Zirconium, ceramic (Emax) and CEREC

MARQ: Pre-clinically, we continue to teach gold as an excellent restorative material option. Students are taught preparation techniques for gold inlays and onlays as well as full cast crowns. Due to patient esthetic concerns and the current costs associated with gold, the use of gold is declining in our clinics. We are doing more full contour zirconia crowns as a substitute.

MINN: We have recently reviewed the teaching of intracoronal cast gold in the Operative Pre-Clinical Curriculum. We found that this modality occupied 21% of the available lab time. When we reviewed utilization in clinic, we found that during a three-year period (2012-2014), out of 42,015 restorations placed, 23 were gold inlays or onlays (0.1%). Seven $\frac{3}{4}$ gold crowns were placed in the same period (0.02%). We have therefore decided to all but remove intracoronal cast gold from the preclinical curriculum. A vestigial experience (3 lectures and one lab exercise) remains so that if students encounter such restorations in clinic, they will understand them. At least part of the time gained in the preclinic curriculum will be utilized to expand the teaching of indirect intracoronal tooth colored restorations (viz., porcelain inlays and onlays). Similar principles of restoration design can be learned with this restorative modality that were formerly gained via the cast gold module. Design and fabrication of porcelain inlays and onlays is also taught in an elective course on CAD/CAM dentistry [O Zidan]. Cast metal crowns (full gold crowns) are taught preclinically by the Division of Prosthodontics, and are managed clinically by the Divisions of Prosthodontics and Operative Dentistry. Such crowns are still believed to be desirable choices for the high stress environment often encountered by terminal molars. There are no plans to change the teaching of cast metal crowns.

NEBR: Preclinical operative has one complete crown project, dental materials has one inlay project, prosth has a cast post and core exercise. The substitute for complete gold crowns is zirconia. The substitute for onlays is CEREC

SIU: Base metal, noble and high noble are offered as options to the patient. Gold inlay and onlay preparations are part of the curriculum, though limited, in the second year operative course. The

technique is taught in conjunction with that of ceramic inlay and onlay preparation and most inlay or onlays performed in our clinic are restored with ceramic.

UMKC: Material of choice for second molars. Material of choice if esthetics is not a concern. We do not use a substitute; We use noble alloy and we use ~ 25-60% noble metal content, so a gold crown has a gold color.

- 6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

COLO: Students have the opportunity to practice caries removal first in simulation clinic on extracted teeth before treating living patients. This pre-clinical operative course happens on summer of second year right before they start with patients in the Comprehensive Care Clinic. During patient clinic, one of the operative competency examinations is required to be on a virgin caries lesion.

CREI: No

IA: No it is a requirement for several competencies. ? Our 3rd Year Clerkship system rotates students through each discipline and experiences are distributed to the students pretty equally within each of the disciplines during the 10 weeks they are there.

MARQ: No. Our patient based skills examinations (“competencies”) require primary caries removal.

Additionally, we ensure students are having adequate clinical experiences with this by assigning specific patients to specific students based upon needs. This is done within a comprehensive patient care model. Also, students must complete a minimum number of each procedure prior to graduation.

MINN: The larger the class size the greater the chances that someone, over the years, will make it through clinic without experiencing patients with significant dental caries. Conceivably a student could graduate having only replaced defective restorations, and restored cervical abrasion and fractures. One way to eliminate the possibility of a student receiving insufficient experience with restoring large carious lesions is to have a competency exam that deals specifically with caries removal. We are considering doing so. A line item on the other competency exams would indicate whether proficiency at removing carious dentin had been demonstrated—and if such had not been demonstrated on any of the existing competency exams, an additional exam would be required whereby such skill and judgment could be demonstrated.

NEBR: Technically it could happen, but I doubt it ever has. Our patient pool seems to have an adequate number of primary caries. The Advocates keep track of our student’s patients and attempt to keep a patient load that delivers the educational needs of our students. In addition, there is a clinical progress committee composed of the advocates, clinical course directors, and

the dean for students and the academic dean that tracks the students' progress toward graduation.

SIU: Yes, in theory, because it is not a defined requirement. Our clinical courses consist of a system which includes multiple competency exams and a point system that leads to exposure to caries removal. The secondary caries removal and ideal preparation design taught ensure that students are getting adequate experience.

UMKC: No, We require 4 competencies that involve restorations with significant caries removal

7) How does your school manage rampant caries patients? Please provide evidence where possible.

COLO: We do not have a program for rampant caries patients in our school. We do have caries risk assessment and counseling, but during patient screening, most rampant caries patients are only accepted when the patient will receive complete or partial dentures. If any rampant caries patient is accepted in our undergraduate students clinics, then only phase I treatment plan is approved that needs to be completed and re-evaluated before phase II treatment is planned.

CREI: Ideally, quadrant dentistry with gross caries removal and GI interims; however, many pts cannot afford both interim and permanent restorations on the same tooth. If the pt cannot afford both, we just work around the mouth as quickly as we can.

IA: We instituted a protocol for treatment of rampant caries based on evidence and have educated both our students and faculty.

MARQ: Generally, these cases are managed in the undergraduate clinics. Advanced cases and cases that are more time sensitive (i.e. pre-radiation treatment) can be sent to our AEGD program.

We actively counsel these patient based upon their risk factors in conjunction with dental treatments.

MINN: Rampant caries patients are managed through a process of caries risk assessment and targeted control strategies. During risk assessment, four principle etiologic factors are sought: oral dryness, low fluoride exposure, a cariogenic diet, and a history of caries activity. Caries control measures are then employed which target these specific etiologic factors. The menu of available strategies includes:

Caries Control Measures

<u>PREVENTIVE TREATMENT</u>	<u>THERAPEUTIC TREATMENT</u>	<u>ADJUNCTIVE TREATMENT</u>
Diet Modification	High-Intensity Fluorides	Patient Education
Low-Intensity Fluorides	Chlorhexidine Mouth Rinse	Oral Hygiene Instruction
Xylitol Chewing Gum	Exogenous Calcium Phosphate	Restorative Treatment
		Pit & Fissure Sealants

Students are taught in the preclinical didactic course how to do caries risk assessment and apply appropriate caries control strategies. However, implementation of these procedures in clinic requires student initiative. Clinical faculty have been taught the same procedures in in-service training, but no system exists to track whether risk assessment and control strategies are appropriately employed. This parallels the problem encountered in private practice where risk assessment and control strategies are often not tracked because third party payers provide no benefits to cover charges for these procedures. Also, the distribution of caries active and rampant caries patients in the clinic is random and students may or may not be assigned patients requiring caries control efforts. A caries control competency exam would help to insure that students were receiving adequate experiences in this area. We do not currently have such an exam.

NEBR: Rampant caries cases are treated with glass ionomer restorations to stabilize the patient. The case is then treatment planned for more definitive treatment.

SIU: Students receive didactic instruction on how to counsel patients with rampant caries by addressing diet, oral hygiene, medications, dexterity, etc. and rampant caries patients are treated on a case by case basis depending on the students skill level and patient compliance or may be referred to our AEGD program when appropriate.

UMKC: Try and save 1st molar to 1st molar; diet analysis and behavior modification; fluoride rinse and varnish with 5000 ppm toothpaste; place GI resin provisionals without anesthetic.

8) What efforts do you make to give all students a uniform experience in clinic?

COLO: For comprehensive care, we have screening clinic staff personal who will assign patients to students according to their needs. Patient care coordinator works with students and updates their needs on Axium. Students have several requirements to accomplish in every discipline. Patient care coordinator and practice leader keep track of students progress. In operative dentistry students need to complete 5 clinical competency examinations.

CREI: There are minimum clinical experiences for all students

IA: Our 3rd Year Clerkship system rotates students through each discipline and experiences are distributed to the students pretty equally within each of the disciplines during the 10 weeks they are there.

MARQ: We have a screening clinic that assesses patient needs at intake. Patients are assigned to Comprehensive Patient Management Groups (CPMGs) where the Group's Leader can assign the patient to a student based upon needs. We utilize Axium reports and quarterly Conference Reports (between each student and their CPMG Leader) to monitor experiences and progress toward the program's goals.

MINN: The Primary Care department is home to the Division of Comprehensive Care. Faculty in this Division operate as leaders of groups of students in clinic and are responsible for management and distribution of patients. The Restorative Dentistry department contains the Divisions of Operative Dentistry, Prosthodontics and Endodontics. These Divisions are responsible for what the students are taught in their respective disciplines and with directing corresponding treatment of patients in clinic. Because the distribution of patients is out of the hands of the Restorative department, we can only insure uniformity of experience through the use of competency exams. Additionally, uniformity of instructional experience is encouraged by rotation of instructors within the clinic environment.

NEBR: We have 4 faculty advocates, who spend their clinical teaching in the "Assessment and Treatment Planning" clinic. The advocates supervise the patient portfolios for their students. They along with the Clinical Progress Committee also keep track of clinic progress of the students to make sure the students are able to complete all of their clinical requirements.

SIU: The uniform experience is ensured by the competency exams required and the point system followed. Specific to the operative section:

Competencies include:

1. Class II composite 2 surface
2. Class II amalgam 2 surface
3. Class II composite 3 surface
4. Class II amalgam 3 surface
5. Class III composite
6. Class IV composite
7. Back-to-back amalgam or composite
8. Complex amalgam (cusp replacement with or without pin placement)

Along with a required 400 points within the operative section (1 surface restoration = 2 points, 2 surface = 4 points, 3 surface = 6 points, 4+ surface or build up = 10 points)

UMKC: We have practice coordinators that look at what a student is treating and they try and make sure they get a good mix of patients. We also have basic minimal experiences that they have to complete.

16) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

COLO: Esthetic procedures are incorporated in different courses, but also are specifically taught in an esthetic course that takes place during Summer semester of DS2 year (end of second year) and Fall semester of ISP 1 year. This course constitutes in 16 hours didactic and 15 hours of simulation clinic hours. It is taught in the department of Restorative Dentistry. In the didactic session, students have lectures on Smile Analysis, Pt psychology, tx plan, dental photography, Porcelain veneer, Veneer bonding and others. During Simulation Clinic students perform Wax-up on a case provided and develop a list of problems and tx plan. The other projects are: whitening tray fabrication; class IV composite (layering technique); composite veneer; composite diastema closure; porcelain veneer preparation.

CREI: ACCs, ceramic onlays, ceramic veneers, compsite veneers are all taught in the preclinical D-2 year. General Dentistry teaches these in the Operative Dentistry course. Fixed Prosthodontics teaches some of these in the preclinical D-2 year. They are taught again in a senior Esthetic Dentistry course

IA: D2 Esthetics integrated into D2 Operative clinic. Tooth whitening, peg lateral, Diastema, Class IV, resin and porcelain veneers

MARQ: Most esthetic treatments are taught in the Department of General Dental Sciences curriculum (pre-clinical operative and fixed prosthodontics). Students are taught esthetic composites and layering techniques, veneers, composite veneers, bleaching, and diastema closure.

MINN: Pre-clinical teaching of various esthetic modalities at the University of Minnesota.

	Div/Dept	Course
Composite direct veneers	Operative/Restorative	Integrated
Composite peg lateral repair	Operative/Restorative	Integrated
Composite diastema closure	Operative/Restorative	Integrated
Porcelain inlays & onlays	Operative/Restorative	Integrated
Porcelain crowns (PFM & APC)	Prosthodontics/Restorative	Integrated
Porcelain veneers	Prosthodontics/Restorative	Integrated
Bleaching	Operative/Restorative	Integrated
Smooth Surface Sealants (Icon)	(Lecture only)	

NEBR: In the preclinical Operative courses, students work with composite restorations, including Class I, II, III, IV and V situations. They make an indirect composite veneer as well as a direct one. Composite layering techniques are taught including an exercise where the entire clinical crown of a maxillary central incisor is built-up with layered composite. CERAC is introduced and at least one restoration is milled. In the preclinical fixed prosthodontic course,

preparation design is taught for PFM and all ceramic crowns. A crown that is grossly over-contoured is reshaped to be more esthetic and the crown is stained and glazed.

SIU: Bleaching, composite veneers, diastema closure, posterior composites.
Operative section.
Separate courses.

UMKC: Porcelain Veneers; All ceramic crowns – (a fabricated Cerec milled crown and the student has to recontour a Zirconia anterior crown and finish and polish the crown).
Department of Restorative Clinical Sciences.
Integrated in lab and a separate lecture course.

- 17) Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.

COLO: It is covered during the lecture, but not performed in clinic or pre-clinic.

CREI: Resin infiltration is taught preclinically; however, it is not provided as a treatment service.

IA: Didactically D3 but not clinically. Not routinely. ICON

MARQ: No

MINN: Operative and Pediatric Dentistry covers the procedure in lectures only. No laboratory or clinical experience is provided.

NEBR: No

SIU: No

UMKC: Not yet

- 18) What are the materials and selection criteria for complex posterior restorations?

COLO: If cusp is missing, the material of choice will be amalgam for direct restoration and onlays or crowns for indirect restorations.

CREI: Not sure what constitutes a complex posterior restoration

IA: Nanohybrid composite, Rubber dam isolation, enamel margins, Minimal occlusal forces

MARQ: Coltene Whaledent Synergy is utilized. Selection criteria are similar to those for other composite resin restorations (location, size, ability to adequately isolate). We use Kerr OptiBond FL and Clearfil SE bonding systems.

MINN:

	Material selection criteria	
	Indications	Contraindications

amalgam (w/ or w/o pins)	recommended where difficulty gaining isolation, access, or visibility; single visit required	esthetic concerns
composite resin	good esthetics; cost less than indirect; single visit required	heavy occlusion; difficulty gaining isolation, access, or visibility
porcelain onlay	good esthetics; slow wear rate; may protect tooth against fracture	single visit required; difficulty gaining isolation, access, or visibility
CAD/CAM onlay	good esthetics; slow wear rate; may protect tooth against fracture	difficulty gaining isolation, access, or visibility
crown	good esthetics; slow wear rate; may protect tooth against fracture	single visit required; difficulty gaining isolation, access, or visibility

NEBR: Amalgam would still be our first choice for large, complex restorations, especially in case with heavy occlusion and/or patients with active caries. Composite resin is also used in many cases, but not our first choice in the situations listed above.

SIU: If considered the definitive restoration for the patient, amalgam is recommended for long-term stability. If the patient prefers composite then full coverage is recommended in the future. If full coverage is the plan for the tooth then either amalgam or composite may be acceptable as the restorative material depending on individual circumstances.

UMKC: AMALGAM

19) How often are onlays provided as treatment vs full crowns?

COLO: Onlays are not performed very often in clinic. The students are taught about onlays in pre-clinical courses, but in clinic majority of indirect fixed restorations are full crowns.

CREI: Of 1181 total onlays and crowns, last year there were 23 onlays or 1.9% of the total

IA: Not often for gold but more frequently for all ceramic with CEREC

MARQ: Onlays are taught and performed in our clinics, but infrequently (a small percentage).

MINN: Inlays and onlays (including ¾ crowns) are much less common than full coverage crowns. This is true for metal and porcelain restorations.

Academic Year 2014-2015	predoc dds	f a	r e	Total
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		c u l t y	s i d e n t	
metal inlay	1	0	0	1
porcelain inlay	0	1	1	2
metal onlay (&3/4crn)	9	0	1	10
porcelain onlay (&3/4crn)	7	0	2	29
metal crown	368	2	1	409
pfm crown	882	4	9	1,222
porcelain crown	343	3	1	493
TOTAL	1,610	2 0 6	3 5 0	2,166

	predoc dds	f a c u l t y	r e s i d e n t	Total
Academic Year 2014-2015				
metal inlay	1	0	0	1
porcelain inlay	0	1	1	2
metal onlay (&3/4crn)	9	0	1	10
porcelain onlay (&3/4crn)	7	0	2	29
metal crown	368	2	1	409
pfm crown	882	4	9	1,222
porcelain crown	343	3	1	493
TOTAL	1,610	2 0 6	3 5 0	2,166

NEBR: Mostly in CEREC cases. Very few cast onlays are done.

SIU: Onlays are usually only offered as a treatment option during use of the CEREC machine chairside.

UMKC: Not very often (almost never)

20) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

COLO: Yes. High fluoride toothpaste and MI Paste (dry mouth patients and patients with dental erosion).

CREI: Yes, Prevident MI Paste, F1⁻ varnish, Beautifil (giomer) for fissurotomies

IA: Only ICON is taught but not being used clinically

MARQ: No, we are not currently utilizing bioactive materials.

MINN: No

NEBR: MI paste in conjunction with Prevident toothpaste, Zylitol products.

SIU: No

UMKC: Fluoride varnish only

21) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

COLO: During pre-clinic course retention techniques are taught such as retention grooves, coves, amalgam pin, dentin pin and Amalgam bond. In clinic amalgam bond is occasionally used as an auxiliary method of retention, for example when an amalgam core build up is placed and the crown preparation is done soon, that the amalgam won't have time to tarnish. We do prefer other methods of retention, such as grooves, coves, amalgapin, instead of dentin pin placement. Occasionally, dentin pins are used in clinic.

CREI: General Dentistry/Operative Dentistry uses pins as supplemental retention

Fixed Pros uses amalgambond in a limited way. General Dentistry/Operative Dentistry does not.

IA: Pins are used in Prosthodontics but in Operative we use other retentive methods. Grooves, amalgapins

MARQ: We continue to teach pin placement concepts and techniques pre-clinically. Pin systems are available in the patient clinics, however, their use is declining. We also teach the

use of amalgambond (Bisco All-Bond 2) and it is routinely used in our clinics for amalgam restorations.

MINN: In preclinical Operative Dentistry students are taught the various types of auxiliary retention for complex amalgam restorations—including grooves, slots, pot holes, channels, boxes, “amalgapins,” threaded pins and amalgam-bonding. Concepts are taught didactically with laboratory simulation exercises. In clinic where supplemental retention is required for complex amalgam restorations, threaded pins and amalgam bonding may be used. Relative frequency of use varies between patient care groups because of the experience and preferences of the overseeing faculty. Based on supply use, threaded pins are used infrequently and level of use has stayed fairly constant over the years. Amalgam bonding enjoyed fairly frequent use a few years ago, but its use has declined considerably.

NEBR: We use both. Amalgam bonding is not often done.

SIU: Yes. Pins are taught pre-clinically for use with complex amalgams and utilized clinically also when appropriate. Amalgam bonding is also taught didactically in pre-clinical and utilized clinically.

UMKC: Pins – yes; amalgambond – no, they are only good enough for sealing

22) Liners, Bases, and Cements. Which ones are being used for what purposes?

COLO: For indirect Pulp capping we use Vitrebond as liner and Fuji II LC or Fuji IX can also be used as a base when necessary. Calcium Hydroxide is only used when there is a caries exposure, then Vitrebond is placed over Calcium Hydroxide. When we have mechanical pulp exposure, we use MTA and Vitrebond.

CREI: CaOH for direct or indirect pulp cap

Glass Ionomer, Resin-modified Glass Ionomer for liner/base; limited IRM use

Glass Ionomer, Resin-modified Glass Ionomer, Composite Resin for cements

IA: Vitrebond, Theracal, GIC for step wise or pulp capping

MARQ: We use Dycal LC and Vitrebond Plus as bases and liners when indicated.
Refer to question #3 regarding cements.

MINN: Liners are thin layers of material applied subjacent to restorations. We employ two liner materials as part of pulp capping therapy—calcium hydroxide and resin-modified glass ionomer. Calcium hydroxide (Dycal) is used when the deepest portion of a cavity preparation is within 0.5 mm of a vital pulp. Because this material is weak it is then covered with a light-cured resin-modified glass ionomer (RMGI) liner (Vitrebond) to prevent damage during restoration placement. For dental amalgam restorations, RMGI liner is occasionally used alone. This occurs in deep cavities where pulpal proximity is >0.5 mm and therefore does not require calcium hydroxide, but where nonetheless concern exists about inadvertent forcing of amalgam into the pulp chamber during condensation. Bases are thicker materials that historically were placed to replace lost dentin and fill the internal outline form of the prepared cavity back to ideal depth. The now archaic philosophy held that doing so would reduce subsequent thermal

sensitivity of the new restoration. Research in the 80's suggested that postoperative thermal sensitivity was more related to microleakage than to the thermal conductivity of the restorative material, and as a consequence we no longer recommend the placement of bases under restorations. Cements are used only for luting indirect restorations. These are covered in the answer to question II.3.

NEBR: We will use GIC liners under some amalgams, especially if removing the last amount of caries would cause an exposure or if the remaining dentin is thin. Dycal is used in cases of pulpal exposure and then it is covered with a GIC liner.

SIU: Liners: Dycal Calcium hydroxide – pulp capping

Solo Optibond – composite bonding

Amalgambond – amalgam bonding

Bases: Fuji II LC – over pulp cap under amalgam, prevent packing amalgam into pulp

Surfil SDR – composite restoration pulpal and gingival floors, improve seal/prevent voids at floor of boxes, decrease polymerization shrinkage stresses on bond

Cements: Multilink Automix – resin bonding of ceramic inlays, onlays, and crowns

Fuji I – glass ionomer cement for metal restorations

UMKC: Dycal as a liner and Vitrebond as a base/cement

III. Student/Program Assessment

- 6) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

COLO: Faculty is not rewarded. Students do receive RVU points based on procedures. RVUs do have effect on student's grade in Comprehensive Care courses.

CREI: Faculty – No

Students are evaluated and graded on quantity and quality of procedures.

Could be a conflict of interest for faculty to be rewarded on production.

IA: No the academic setting should not be the place for this kind of reward system

MARQ: No. We want to emphasize the importance of quality over speed while learning. However, there are some small “incentives” for the top 10 producers of each class. For example, the most productive students do not pay a site fee for their regional licensure examinations.

MINN: Students: An incentive program was just instituted with the current junior class (Class of 2017). Evaluated every 6 months, students received money in their accounts based on in-house production. We have no outcomes yet on which to evaluate the worth of this program. Faculty: Currently there is no faculty incentive, although it is being discussed.

NEBR:

- a. UNMC COD dental students have production goals they need to meet in order to graduate. It is \$47,000 for the junior and senior years combined. If a student does not make the goal, has completed clinical requirements, but has some missed clinical sessions, the sessions must be made up after graduation.
- b. There are no specific awards other than one award to the D4 student with the highest clinical production. There is not a consensus among the faculty regarding the clinical production system. There are concerns of the validity of production as a means of student assessment in the minds of some of the faculty, but at present, the production goals remain.
- c. There have been issues of students winning the award for Clinical production where the quality of their clinical dentistry has been called into question by clinical faculty.
- d. My concern would be that more emphasis needs to be placed on the quality of the dentistry than the quantity of the dentistry. Does such an award reward production instead of clinical excellence? Unfortunately, it has sometimes been the case and the question that needs to be answered, what is the educational benefit to the student who is given an award for clinical production when at the same time the clinical faculty and oftentimes their peers call into question the quality of the dental care provided?
- e. Faculty are not evaluated or rewarded on the basis of production.

SIU: No. The production should be considered as a learning tool but not used in evaluation in order to preserve the attitude of quality over quantity when learning.

UMKC: NO Clinical productivity is a part of the grade... not the be all and end all, but you do have to do a certain amount of work. The rate of development of competency varies from students to student so doing a certain minimum amount of work help all achieve enough for us to determine whether or not they are competent. After they advance in quality and would be competent then it would be nice to give them sort of incentive.

- 7) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

COLO: "Operative Dentistry" maintains the identity. We have pre-clinical and clinic operative courses, that is a big part of dental curriculum. We believe it should retain its identity.

CREI: Unsure

IA: As an organization Academy of Operative Dentistry needs to determine what our identity is and articulate this in the dental profession in a manner that distinguishes Operative Dentistry from General Dentistry. In summary, our Mission statement for Operative Dentistry provides a framework for its identity. “Based upon best available evidence, our mission as Operative Dentistry is to maintain optimal patient oral comfort, function and esthetics through risk-based diagnosis, prevention and tooth-preserving treatment of caries and other dental hard tissue disorders. Because our focus is distinguished from General Dentistry and we need to provide leadership and direction in where dentistry should be headed in the future in it’s treatment of dental disease.

MARQ: We feel it is important that “operative dentistry” maintains an identity as its own discipline. We feel it is important to train an excellent “generalist”.

MINN: The discipline of Operative Dentistry encompasses single tooth restorations. Because of the decline in dental caries and trends toward minimally invasive treatment and metal-free practices, the importance of Operative Dentistry as a distinct discipline is being questioned. These concerns are a bit premature. There are indications that the decline in dental caries prevalence has bottomed out and is beginning to reverse. Rampant caries patients are still quite common and treatment of such patients require comprehensive caries control strategies and sophisticated restorative techniques. Limiting the restorative curriculum is not wise. To strengthen the discipline against these trends, Operative Dentistry should include the teaching of caries risk assessment and caries control strategies. Since we are involved in the surgical treatment of the lesions, it would make sense that we are also involved with the non-surgical treatment of the disease.

NEBR: We feel operative dentistry should remain as a separate discipline. Single tooth restorative procedures, including crowns and CAD/CAM techniques should be included. As well as an emphasis on esthetic techniques and caries reduction and treatment.

SIU: Continue to support and attend organizations such as CODE and Academy of Operative Dentistry and maintain structure within dental school curriculums. The identity of operative dentistry should include all direct restorations and conservative indirect restorations. The identity needs to be preserved in order to prevent the watering down of the principles taught within the discipline.

UMKC: Operative should focus on non-surgical and surgical management of caries. It should be evidence based and incorporating new technologies for diagnosis and management of early and advanced caries and then hire faculty for this specific purpose. Restoration of single tooth, use of digital dentistry, caries management, minimally invasive dentistry and esthetics/bleaching. Yes. Or else it won't be stressed and it needs faculty who are demanding in this area.

- 8) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

COLO: We do host traditional clinical boards. Moving away from traditional examinations has not been discussed yet at our school.

CREI: We host CRDTS & WREB. The Dean would like us to investigate OSCE alternatives as they might become the exam of choice

IA: Yes we host a traditional board but have made an official statement urging our state dental board to consider adopting an OSCE exam like Canada.

MARQ: As of this year, our school will no longer host a traditional patient based mock board exam (restorative, perio). We will continue to administer a manikin based mock board (endo, fixed prosthodontics). In its place, we will be administering an intensive review session and small group case/scenario based learning.

MINN: The council of faculty voted to stop hosting live patient licensing exams two years ago. The dean convinced the faculty that students already in-training at the time of the decision should be allowed to take live patient exams at the school. The last such exam will therefore be held in 2018. To replace the exam, the school successfully lobbied the MN Board of Dentistry to accept the National Dental Board of Canada Written & Objective Structured Clinical Exams (OSCE). Successfully completing this exam is now a requirement for graduation. One downside to the Canadian exam is that it is useful for graduates who want licensure only in Minnesota. We are now looking at the "Buffalo model." The University of Buffalo School of Dental Medicine apparently has an arrangement with the Central Regional Dental Testing Service (CRDTS) to assist with and utilize the school's competency examinations as the licensing exam.

NEBR: Yes, we host CRDTS. There are no current discussions regarding a change in the board exams. The faculty see benefits of using non-patient exams, however the patient-based exam gives a small chance to evaluate personal skills with patients.

SIU: Yes, we host the traditional clinical board exam conducted by CRDTS. Discussion has occurred on the potential transition to a non-patient based exam as preparation for potential changes suggested by governing bodies within the profession; but, no action has been taken to make any transitions at this time and no specific alternatives have been considered.

UMKC: Yes. We do host a traditional patient based exam-WREB. We wish we could move to other non-patient based licensure processes. We have used a non patient based trial boards exam for more than 15 years. We don't want to go back to a patient based trial board exam, patients get abused.

- 9) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona's Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

COLO: We do not use digital imaging for student project grading.

CREI: Not using either software; however, we are investigating its potential value and applicability in the curriculum.

IA: Dr. So Ran Kwon has done preliminary research at Iowa which shows we still have a ways to go in the validity and reliability of this approach. It is emerging and improving but needs evidence-based support.

MARQ: We do not currently used preparation check/scanning software.

MINN: NA

NEBR: We used Sirona Prep Check in the D-1 course last year. While it has promise, we found it cumbersome and few of the students used it.

SIU: Sirona's Prep Check is still in the process of being incorporated into the curriculum. It has progressed very slowly. Computer-aided evaluation seems likely to grow in the future but is currently limited by the ability to invest in every changing technology. Due to limited support from the manufacturer, we currently have 5 bluecam acquisition units in our pre-clinic but only 2 have the Prep Check software installed and operational. The software is used as an adjunct method of feedback for the students in which they can scan their crown preparation and have the software compare it to previously scanned in ideal preparation and also compare it to a set of designated parameters defined by faculty. The students have access to the units outside of class time and after hours in the laboratory.

UMKC: We can use Sirona's Prep Check in the Fixed Prosthodontics lab. We think it will be helpful.

- 10) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a "one and done" approach? Please provide rationale for the choices.

COLO: In Pre-Clinical Operative courses we do have four practical examinations. During Clinic, students need to challenge 5 operative examinations independently. These clinical examinations are done during three semesters and needs to include Class II composite (virgin lesion), Class II amalgam and Class III composite restorations. Two comprehensive care faculty grade the operative clinical examinations, one grader needs to be full time faculty. Faculty calibration in Operative Dentistry are performed on school, department and one to one level.

CREI: A couple of accreditation visits ago, the accrediting team recommended that we have more competencies. Now we have competencies that are lab-based, clinical-based, and written through all 4 years.

IA: Each discipline requires several competencies on clinical procedures. A full time faculty grades the exam

MARQ: Students have ongoing assessment throughout the curriculum. In addition to normal, summative course assessments, our students take a series of manikin based skills examinations (MBSEs) and patient based skills examinations (PBSEs). These are strategically placed throughout the curriculum to assess performance and basic competency with various procedures. Successful completion is required for advancement. MBSEs are evaluated blindly by faculty of the corresponding discipline. PBSEs are evaluated by dual graders (general dentists and/or specialists) in a manner that mimics regional licensure examinations. These modalities provide ongoing student assessment that is not solely dependent upon patient flow. Students must complete all PBSEs prior to graduation, but there is built-in flexibility that overcomes timing issues that can present with the comprehensive patient care model.

MINN: One of the requirements for graduation from the School of Dentistry is successful completion of the 3 competency exams in Operative Dentistry:

1. AMALGAM preparation and carving
2. ANTERIOR COMPOSITE preparation and restoration
3. POSTERIOR COMPOSITE preparation and restoration

All competency exams must be passed in order to graduate. Failure in any aspect of the preparation or restoration will result in failure of the entire exam. Each exam need only be passed one time. We have considered multiple exams for each competency to insure proficiency is retained over time. However, a major limitation with implementing multiple exams for each competency is finding enough treatment planned restorations in each category to both provide minimal essential preliminary experience as well as the several exams for each of the 110 dental students, 16 PASS students, and 12 dental therapy student. Two Operative Division instructors are required to grade a competency exam. Instructors make their evaluations independently and afterwards confer with each other to make a consensus grade. If there is disagreement between instructors over the clinical acceptability of the preparation or restoration, the lead instructor calls in a third instructor of their choosing to also evaluate the work. Although Comprehensive Care Division faculty also evaluate student clinical work, they do not evaluate competency exams. Faculty evaluation standards are calibrated and measured at annual Saturday in-service meetings.

NEBR:

- a. Clinical competency examinations are part of our clinical curriculum. Most programs have multiple measures of assessments over time instead of a one and done concept of assessment.
- b. Clinical faculty in the respective clinical departments assess and grade the competency examinations.

SIU: Attached is the check off list provided to our students listing the required competencies and points needed for graduation. The competencies are graded by the clinical faculty covering the procedure. Each competency is only required once if passed. If not passed the student must re-attempt and points are added to the total required as a result of the failed competency.

Appendix C - SILPS Competency Check List
(See Appendix A or Course Syllabus for full details)

Endo	
Year III Points	60
Year III Experiences	
Year III Competencies	
Year III or IV Experiences and or prerequisites	<input type="checkbox"/> *One of the following combinations: <ul style="list-style-type: none"> • One Anterior tooth and one premolar • Two Anterior teeth • Two Premolars <input type="checkbox"/> One Molar Endodontic assists may contribute to overall endo point requirement – see syllabus
Year IV Experiences	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Mock Boards
Year III or IV Competencies	<input type="checkbox"/> One Anterior or Premolar tooth
Year IV Competencies	
Total Points for Graduation	180

Oral Surgery	
Year III Points	
Year III Experiences	Rotations as assigned
Year III Competencies	<input type="checkbox"/> Local Anesthetic
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	<input type="checkbox"/> Extraction – single tooth
Total Points for Graduation	

OD / OM	
Year III Points	
Year III Experiences	Rotations as assigned
Year III Competencies	<input type="checkbox"/> OSCE 1 <input type="checkbox"/> OSCE 2
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	<input type="checkbox"/> OSCE
Total Points for Graduation	

Perio	
Year III Points	300
Year III Experiences	
Year III Competencies	<input type="checkbox"/> Adult Prophy <input type="checkbox"/> Nonsurgical Re-evaluation OSCE <input type="checkbox"/> Surgical Re-evaluation OSCE
Year III or IV Experiences and or prerequisites	See Perio section of SILPS and Perio manual
Year IV Experiences	<input type="checkbox"/> Mock Board <input type="checkbox"/> Case Presentation <input type="checkbox"/> One of the following: <ul style="list-style-type: none"> • Perio Surgery Perform • 3 qualified perio surgical assists – see syllabus
Year III or IV Competencies	<input type="checkbox"/> Scale & Root Plane <input type="checkbox"/> Clinical Re-evaluation <input type="checkbox"/> Periodontal Maintenance
Year IV Competencies	<input type="checkbox"/> Dx. & TxPl
Total Points for Graduation	395

*Prerequisite for competency

Appendix C - SILPS Competency Check List
(See Appendix A or Course Syllabus for full details)

Radiology	
Year III Points	
Year III Experiences	Rotations as assigned
Year III Competencies	<input type="checkbox"/> Adult Manikin FMS* <input type="checkbox"/> Pediatric Manikin FMS* <input type="checkbox"/> Normal Anatomy OSCE <input type="checkbox"/> FMS Interpretation OSCE *Adult and Pediatric manikin comps must be completed by end of fall semester.
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	<input type="checkbox"/> Adult B/W (Live Patient) <input type="checkbox"/> Adult Panoramic (Live Patient) <input type="checkbox"/> Pediatric Manikin B/W and Occlusal Radiographs <input type="checkbox"/> Senior Radiology OSCE
Total Points for Graduation	

DAU	
Year III Points	
Year III Experiences	Rotations as assigned
Year III Competencies	
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	<input type="checkbox"/> Pt. Care Complete
Year IV Competencies	
Total Points for Graduation	

Fixed	
Year III Points	200
Year III Experiences	
Year III Competencies	
Year III or IV Experiences and or prerequisites	<input type="checkbox"/> FGC <input type="checkbox"/> PFM <input type="checkbox"/> PFM Retainer <input type="checkbox"/> Non-specific Retainers <input type="checkbox"/> CPC <input type="checkbox"/> NCPD <input type="checkbox"/> All Ceramic Restoration
Year IV Experiences	<input type="checkbox"/> Mock Boards
Year III or IV Competencies	<input type="checkbox"/> Crown - one crown of any type above must be done first and crown must be done before bridge <input type="checkbox"/> Bridge or bridge alternative
Year IV Competencies	
Total Points for Graduation	900

Implants	
Year III Points	20
Year III Experiences	Rotations as assigned
Year III Competencies	
Year III or IV Experiences and or prerequisites	<input type="checkbox"/> *Implant Assist <input type="checkbox"/> One of the following: <ul style="list-style-type: none"> • Implant Retained Over denture • Implant Supported Crown • Implant Supported FPD
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	<input type="checkbox"/> Implant OSCE
Total Points for Graduation	125

*Prerequisite for competency

Appendix C - SILPS Competency Check List
(See Appendix A or Course Syllabus for full details)

Removable	
Year III Points	215
Year III Experiences	
Year III Competencies	<input type="checkbox"/> Treatment Plan OSCE (must be done before RPD Treatment plan individual)
Year III or IV Experiences and or prerequisites	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Full Denture (single arch) <input type="checkbox"/> Immediate Denture <input type="checkbox"/> Reline or Rebase <input type="checkbox"/> Partial Denture cast Mandibular D-Ext <input type="checkbox"/> Partial Denture cast
Year IV Experiences	
Year III or IV Competencies	<input type="checkbox"/> Border Mold & Final Impression (must be done before full denture) <input type="checkbox"/> Full Denture
Year IV Competencies	<input type="checkbox"/> RPD Treatment Plan Individual
Total Points for Graduation	650

Behavioral Sciences	
Year III Points	
Year III Experiences	See syllabus
Year III Competencies	Patient Interaction Assessments* <input type="checkbox"/> Videotape (OD or 1 st . appt) <input type="checkbox"/> Videotape (Tx Plan) <input type="checkbox"/> Videotape (Oral Surgery)
Year III or IV Experiences and or prerequisites	Any two of the above videotapes must be done before challenging the competency. Third videotape is the competency.
Year IV Experiences	See syllabus
Year III or IV Competencies	
Year IV Competencies	
Total Points for Graduation	

Community Dentistry	
Year III Points	30
Year III Experiences	Rotations as assigned
Year III Competencies	
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	
Total Points for Graduation	100

Operative	
Year III Points	150
Year III Experiences	
Year III Competencies	Any 4 of the competencies listed below.
Year III or IV Experiences and or prerequisites	See operative section of SILPS
Year IV Experiences	<input type="checkbox"/> Manikin MB Ia. <input type="checkbox"/> Manikin MB Ib. <input type="checkbox"/> Mock Board I a. <input type="checkbox"/> Mock Board I b. <input type="checkbox"/> Mock Board II a. <input type="checkbox"/> Mock Board II b.
Year III or IV Competencies	<input type="checkbox"/> Class II Composite 2S <input type="checkbox"/> Class II Amalgam 2S <input type="checkbox"/> Class II Composite 3S <input type="checkbox"/> Class II Amalgam 3S <input type="checkbox"/> Class III Composite <input type="checkbox"/> Class IV Composite <input type="checkbox"/> Back-to-Back Amal. /Comp. <input type="checkbox"/> Complex Amalgam (4 or more surfaces with or without pin and replacing a cusp)
Year IV Competencies	
Total Points for Graduation	400

Ortho	
Year III Points	
Year III Experiences	
Year III Competencies	
Year III or IV Experiences and or prerequisites	
Year IV Experiences	Rotations as assigned
Year III or IV Competencies	
Year IV Competencies	<input type="checkbox"/> Dx of Malocclusion
Total Points for Graduation	

*Prerequisite for competency

Appendix C - SILPS Competency Check List
(See Appendix A or Course Syllabus for full details)

Pedo	
Year III Points	130
Year III Experiences	
Year III Competencies	
Year III or IV Experiences and or prerequisites	<input type="checkbox"/> <input type="checkbox"/> *Initial exam <input type="checkbox"/> <input type="checkbox"/> *Recall exam <input type="checkbox"/> Class I amal or resin (primary) <input type="checkbox"/> *Class II amal or resin (primary) <input type="checkbox"/> Stainless Steel Crown <input type="checkbox"/> Pulpal Intervention – see syllabus for details <input type="checkbox"/> Space Maintainer (uni or bilateral) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> *Sealants <input type="checkbox"/> <input type="checkbox"/> *N2O Procedure
Year IV Experiences	
Year III or IV Competencies	<input type="checkbox"/> Class II amal or resin (primary) <input type="checkbox"/> N2O Procedure <input type="checkbox"/> Initial exam <input type="checkbox"/> Recall exam <input type="checkbox"/> Sealant (permanent)
Year IV Competencies	
Total Points for Graduation	335

*Prerequisite for competency

UMKC: In the third year we require three manikin procedures (Class II Amalgam, Class II composite and class III composite). This is so the clinical faculty can be introduced to the skill level as the students come to the clinic for the first full time semester in the summer. Then we require 6 patient operative experiences with the operative or generalists to be complete. The student just has to work with us on these procedures and they can get help and direction. When they are fourth year and after all of their requirements on manikins and patient experiences are completed they can attempt four competency examinations on patients. We require 4 competencies with significant caries removal on patients (One

multi surface amalgam, one multi surface anterior composite, one multi surface posterior composite and one multi surface caries removal in their 4th year summer/fall semester. They have to pass this without any help. They also have to pass a written exam in their 3rd and 4th year that is relevant to the materials and procedures they do in the clinic. Who grades/evaluates the performance exam? Operative faculty or their designee. Are their multiple assessments or a “one and done” approach? Competencies are one and done. Please provide rationale for the choices. Until they are a fourth year they need to work with operative faculty who can be more demanding and have a preference for minimally invasive procedures. When they are 4th year they can attempt competency exams which will help prepare them to pass the state board clinical exams. Our students get adequate experience in operative dentistry because we have comprehensive care treatment in our clinic and we have enough patients for them to get enough operative experiences.

IV. OTHER

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

IA: IDEAS for 2016 CODE Agenda

1. Current evidence-based practice in caries diagnosis and removal.
 - a. CRA and activity and treatment protocols
 - b. Stepwise vs partial caries removal
 - i. Carious dentin as substrate for restoration
 - c. Pulp capping
2. Methods for teaching caries detection and removal
3. Current evidence for use of Carbamide peroxide, Chlorhexidine and Prevident in caries control
4. Remineralization agents, methods (fluoride, MI Paste, silver nitrate)
5. Efficiency in Admissions screening/ triage for patient care/student education experience
 - a. Acute care clinic
6. Retention for amalgam, including intracoronal

Consortium of Operative Dentistry Educators (CODE)



REGION III (SOUTH MIDWEST) ANNUAL REPORTS

Region III Director:
Dr. Shalizeh A. Patel
University of Texas – Houston
Houston, TX

Region III Annual Meeting Host:
Dr. Janet Harrison
University of Tennessee Health Science Center
College of Dentistry
Memphis, TN

Region III Annual Report Editor:
Dr. Terry Fruits
Oklahoma College of Dentistry
Oklahoma City, OK

CODE REGIONAL MEETING FORM

REGION: III

LOCATION INFORMATION FOR 2014 REGIONAL MEETING

University: University of Tennessee Health Sciences Center, College of Dentistry

Dates: October 28-30, 2015

Chairperson: Dr. Janet Harrison

Phone # 901-448-6992

University: University of Tennessee Health
Sciences Center

Fax # 901-448-5510

Address: 875 Union Ave.

E-mail Jharri35@uthsc.edu

Memphis, TN 38163

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

Screening procedures for patients at each school.

LOCATION INFORMATION FOR 2016 REGIONAL MEETING

University: University of Tennessee School of Dentistry

Dates: TBD

Chairperson: Dr. Alicia Hathorn

Phone # 601-984-6030

University: University of Mississippi Medical
Center

Fax # 601-9846030

Address:

E-mail arose@umc.edu

Please return all completed enclosures to;

Dr. Edward J. DeSchepper, National Director
UTHSC College of Dentistry
875 Union Avenue
Memphis, TN 38163

E-mail: edeschep@uthsc.edu
Phone: 901-448-7686
Fax: 901-448-1625

DEADLINE FOR RETURN: 30 Days post-meetingAlso 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 REGIONAL ATTENDEES FORM**REGION:** III

NAME	UNIVERSITY	PHONE #	FAX #	E-mail
Dr. Zach Dacus	U. of Oklahoma	405-271-5735	405-271-3006	zachary-dacus@ouhsc.edu
Dr. Robert Miller	U. of Oklahoma	405-271-5735	405-271-3006	robert-miller@ouhsc.edu
Dr. George Cramer	Baylor College of Dentistry	214-828-8468	214-874-4544	gcramer@bcd.tamhsc.edu
Dr. Gary Frey	U. Texas at Houston School of Dentistry	713-486-4286	713-486-4108	Gary.N.Frey@uth.tmc.edu
Dr. Juliana Barros	U. Texas at Houston School of Dentistry	713-486-4564	713-486-4353	Juliana.Barros@uth.tmc.edu
Dr. Shalizeh Patel	U. Texas at Houston School of Dentistry	713-486-4269	713-486-4353	Shalizeh.Patel@uth.tmc.edu
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Dr. Nick Miniotis	Louisiana State U. School of Dentistry	228-257-0427	504-941-8218	nminio@lsuhsc.edu
Dr. Alisha Hathorn	U. Mississippi School of Dentistry	601-984-6030	601-984-6039	arose@umc.edu
Dr. Mitch Hutto	U. Mississippi School of Dentistry	601-201-2791	601-984-6039	dhutto@umc.edu
Dr. Steve Magee	U. Mississippi School of Dentistry	601-984-6030 6146	601-984-6029	smagee@umc.edu
Dr. Joe Connor	U. Texas, San Antonio School of Dentistry	210-567-6393	210-567-6354	connorj@uthscsa.edu
Dr. Shannon Roberts	U. Texas, San Antonio School of Dentistry	210-567-3670	210-567-6354	dobelbower@uthscsa.edu
Dr. Ashanti Braxton	U. Tennessee College of Dentistry	901-448-2211	901-448-1294	abraxton@uthsc.edu
Dr. Ed DeSchepper	U. Tennessee College of Dentistry	901-448-7686	901-448-1625	edeschep@uthsc.edu
Dr. Janet Harrison	U. Tennessee College of Dentistry	901-448-6692	901-448-1294	jharri35@uthsc.edu

2015 NATIONAL CODE AGENDA
REGION III
SUMMARY RESPONSES TO NATIONAL AGENDA
2015 National CODE Agenda
Region III
Summary Responses to national Agenda

I. Admission and Retention

1. Respondents were supportive of their Admissions Committees, citing evidence of good retention and post-graduate success rates. It was reported that no matter the screening criteria, “students will be admitted that will struggle in at least one of the areas of academics, skill development or ethical behavior.”

2. There were six out of seven respondents; pre-admission dexterity tests are not administered by these six. One college (University of Tennessee) evaluates hand skills during the first six weeks of matriculation *via* the DentSim course.

3. All seven schools have had the occasional student who was not suited (either behaviorally or ethically) to be a dentist. Examples included students who forged, lied, cheated, or were physically unable to perform the work.

4. Most of the schools have dismissed at least one student in the recent past. Substandard academic performance was the leading cause. Remediation or repeating the entire year are offered before dismissal. Dismissal is difficult as each school is very careful to fulfill due process.

5. Results regarding tuition refund and (alternate) career counseling were varied. (6.) None offered tuition insurance.

7. None of the schools facilitated a dismissed student’s transferal to another school.

II. Materials/Techniques/Curriculum

1. Systems are provided for bonded restoration removal but no formal teaching is provided except by one respondent (UTn.) (2.) Air abrasion is “mentioned” or “discussed” but no respondent formally teaches it.

3. More PFMs than non-metal crowns (65%:35%) are being prescribed at each school except UTn (70%:30%) and the corresponding cements are comparable.

4. None of the seven schools are considering removing amalgam placement from their curricula. (5.) Indirect gold is taught at each school yet gold use in clinic is minimal due to “cost and esthetics.”

6. Primary caries detection and removal are taught at each school; it is impossible to graduate and not experience primary decay. Competency exams assure that caries management is experienced and understood.

Each school (7.) uses either self-developed or published protocols for rampant caries management. Each program is multi-faceted and requires a degree of patient participation.

8. Providing a “uniform experience” to all dental students resulted in thorough and enthusiastic responses. Terms such as “global point system,” “vertically integrated,” “cross pollination,” and “calibration” denoted the effort that has gone into providing this critical uniformity. This question was the most enthusiastically answered so far. Some schools relied on portfolio overview, one (UTn) relied on the oversight of the group leaders in the General Practice Dentistry Department.

9. Most esthetic courses are preclinical and taught in fixed prosth and operative. All current esthetic procedures are being taught. There is varying emphasis on CAD-CAM restorations; (10.) resin infiltration of caries is not being taught nor performed in any of the schools.

11. Selection criteria for complex posterior restorations are similar but different materials are being taught. The gamut ranges from pin-retained, bonded amalgams to CEREC onlays. All agreed posterior composites have limited application. (12.) Gold onlays are “infrequently” to “extremely rarely” prescribed. MI Paste (13) is the predominant bioactive material as reported by three schools. The remaining four do not prescribe remineralizing agents.

14. While still taught preclinically by most respondents, pins and amalgam bonding are decreasing in clinical use. One school (UTn) is considering eliminating pin placement from the curriculum. (15.) While all schools are teaching calcium hydroxide and glass ionomers as liners, several schools are not teaching bases. One school (UTn) reported the use of bioactive lining cement.

III. Student/Program Assessment

1. There were no reports of incentivizing students or faculty based on production. Two schools increase clinical evaluations (grades) or make awards based on high production of high quality restorations.

2. Respondents were unanimous in recommending maintaining Operative Dentistry’s identity as its own discipline. Operative dentistry involves disease control, cariology, biomaterials, and the clinical treatment of dental infection. “Operative Dentistry should retain its own identity because it is unique from all other dental disciplines.”

3. No respondents reported using a non-patient clinical board exam; while the future seems promising for digital imaging for student project grading, only one school has introduced its use. (4.) Similar skills assessments and competency exams were reported for preclinical operative students.

(Editor Note: Questions condensed for printing purposes)

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

2015 NATIONAL CODE AGENDA

(Evidence cited where applicable)

October 28-30, 2015

Report on the proceedings of CODE Region III

DeSchepper ED (ed.) Code Regional Annual Reports 2015

<http://www.unmc.edu/code/>

Region III School Abbreviations

BAY	Baylor University	OKLA	University of Oklahoma
LSU	Louisiana State University	TENN	University of Tennessee
MISS	University of Mississippi	UTHSA	University of Texas- San Antonio
UTH	University of Texas- Houston		

2015 NATIONAL CODE AGENDA

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

I. Admissions and Retention

- 1) **Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.**

University of Oklahoma

The admissions committee does the best job it can. There is no way to assure that every admitted student will succeed in dentistry. It seems that no matter what screening criteria are used, students will be admitted that will struggle in at least one of the areas of academics, skill development or ethical behavior.

LSU

The committee does an adequate job of screening and accepting students. Admissions records are reviewed and top candidates are invited for an interview. Entering class size is limited to 65 students. Students are from in-state except 4-5 from Arkansas and 4-5 out-of-state. In recent years all students that graduated eventually passed board exam for licensure. The most recent graduating class had 62 graduates. 27 students applied for post-grad residencies and 23 were accepted.

University of Mississippi

Our students perform average to above average in National Board Scores, their pass rate for Clinical Boards is above 90% and acceptance to residency programs is above 80%.

Baylor University

Yes, the Admissions Committee at our institution does an adequate job of reviewing files and accepting students that have the potential to be successful in the dental profession. The committee receives information that the applicants report, letters of recommendation from college or university faculty who have had positive interactions with the applicants, and academic records provided by the colleges/universities that the applicants attended. Additionally, applicants with entrance exam scores and grade point averages that meet or exceed the minimum standard for consideration for admission at our school are invited to a campus interview. Each applicant is interviewed for approximately ten minutes each by the Director of Dental Admissions and two other members of the Admissions Committee. The applicant will then receive an overall score which takes into account his/her academic accomplishments, performance on the DAT entrance exam, recommendations from college/university faculty, dental professionals, and other individuals as the case may be, and performance during the interview process. Applicants are offered positions in the D1 class for the next academic year according to their overall scores.

Ultimately, there is no guarantee that any of the individuals we accept into our dental program will succeed in dentistry once they graduate. We have had reports over the years that a few of our former students were not happy in the field of dentistry and chose to pursue other careers. What we can report is that our student retention rate is greater than 95% and that this past year (May, 2015) we had a graduation rate of 100%.

University of Texas – Houston

N/A

University of Texas – San Antonio

I am not certain what constitutes an “adequate” job or what constitutes “evidence” for my opinion. If the question is, “Do more than 98% of students enter the school graduate?” then the answer is yes. If the criteria is, “Do many struggle, or do all complete their degree in 4 years?” then the answer is no. Questions concerning the effectiveness of the Admissions Committee are asked every time a student is dismissed or asked to repeat a year. I believe that the Admissions Committee identifies the best candidates in the applicant pool. Whether those students accept a position in the class is a matter of competition between top schools. Perhaps better questions are “Does your applicant pool contain all the talented students needed to fill your class?” and “Does your school recruit those students who will be successful in the profession?”

University Of Tennessee

We think so. National board and state board exam pass rates are very high. Our graduates are in high demand by the Armed Forces and Public Health services.

- 2) **Is the applicant’s dexterity evaluated as part of the admissions process? Do you feel it should or shouldn’t be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?**

University of Oklahoma

No. Previous studies have shown that evaluation of manual dexterity as part of the admissions process did not result in a positive correlation of student success in skills development.

LSU

All students invited to an interview are required to take a chalk carving exam. Exam results (best to worst of students accepted to dental school) did not correlate to overall achievement in dental school; however, there was a slight correlation with Pre-clinical Operative (D1) which also carried over into clinical operative.

The LSU Assistant Dean of Admissions felt that the chalk carving exam also provided information about the candidate on organizational abilities, stress management, discipline, time management and self-assessment.

University of Mississippi

N/A

Baylor University

No, the applicant's dexterity is not evaluated as part of the admissions process. A number of years ago, a chalk carving exercise was completed by those applicants granted interviews for admission but this exercise had no bearing on the admissions process and applicants were advised of such. The exercise was part of a study conducted by one of our faculty members who looked for a correlation between the applicant's performance on the chalk carving exercise and his/her hand skills in pre-clinical laboratory courses in the D1 and D2 years of our program. The results of this study were never published and the faculty member has since retired. It would seem that a dexterity evaluation of some type would be useful in predicting student success in developing clinical hand skills, but the evidence does not bear this out. A recent article from the Journal of Dental Education ("Relationship Between Hand-Skill Exercises and Other Admissions Criteria and Students' Performance in Dental School"; Ballard, Hagan, Cheramie; May 2015) showed that the only positive correlation involving the chalk carving scores was with the pre-clinical operative dentistry course grade. The study found limited correlations between the authors' dental school admissions criteria and its students' success in dental school. Other studies have also found little or no correlation between chalk carving scores and students' success in dental school. Many faculty believe that an applicant's dexterity should be evaluated as part of the admissions process, but the evidence does not show that chalk carving is a good indicator of the success of a dental student in dental school or beyond. Is there another dexterity evaluation method that could predict student success in dentistry? Perhaps, but at this point in time we were unable to find any evidence to that effect.

University Of Texas – Houston

No not at this point. A qualified applicant should be evaluated. We need proper means of evaluating.

One faculty is planning a study with the "LearnAPrep" block and compilation of results at the end of the academic first year.

University of Texas- San Antonio

A. The Journal of Dental Education archives include 1671 citations on manual dexterity tests. The best quote I came across is, "...dental educators who believe that evidence of manual dexterity or perceptual ability must be a part of the admissions decision can find enough supporting evidence to justify doing so. When added to college GPA and the AA, information from the PAT may in fact enhance predictability. There is also evidence, however, that manual skills can be learned during routine dental curricular experiences."

Evaluation of Applicants to Pre-doctoral Dental Education Programs: Review of the Literature. (J Dent Educ 2005 69:1095-1106)

Another article said, "in conclusion, the MDT did not appear to add information to the

current admissions criteria.” **Reliability and Validity of a Manual Dexterity Test to Predict Preclinical Grades** (J Dent Educ 2004 68:985-994). A third article said, “The only positive correlation involving the chalk carving scores was with the preclinical operative dentistry course grade.” **Relationship Between Hand-Skill Exercises and Other Admissions Criteria and Students’ Performance in Dental School** (J Dent Educ 2015 79:557-562)

B. In conclusion: I do, and chalk carving.

University Of Tennessee

No. Using a measure that has not been either standardized or at the very least very well accepted is looking for trouble. Also, how would one grade this test? Pass / Fail for entry into dental school?..or as a part of the overall application? We screen for hand-eye coordination issues within the first six weeks of matriculation. When hand-eye issues occur, the course director in Dent-Sim tries to work on them in Dent Sim Clinic since this is the first course where the issue with dexterity would be first noticeable. If this approach doesn’t seem to be successful, the university health and/or SASS would likely get involved as well as the Operative Department at that point.

To our knowledge, no student has ever applied to our school with known dexterity problems. At interview day, they sign the technical standards form which includes a statement related to dexterity.

3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer? Please give examples.

University Of Oklahoma

Yes, but not intentionally. As stated above, no matter what screening and evaluation criteria are used, a small number of students will be accepted that demonstrate problematic characteristics.

LSU

A minimal number of students have been dismissed from the school for behavioral reasons. In a 10 year period (98-08) 27 students were dismissed. Of those students 2 were dismissed for behavior, 2 medical, 12 personal and 10 academic

University of Mississippi

Yes, any applicant with questionable character that performs well academically and in an interview can become an accepted student. During their time, instances will present themselves and the person will be reprimanded depending on the severity of the issue. We have recently had one individual that has been caught lying, and forging documents to circumvent the system- this student had to take a leave of absence and upon return is being monitored closely. Another student who was performing poorly academically and was found cheating on practical examinations was reported by peers and was dismissed.

Baylor University

Yes, our institution has on occasion accepted a student who was not well suited to become a dentist. In one case, the student had a light sensitivity condition which made it difficult for the student to detect decay or to see details in preparations and restorations; the student was unaware that this condition was severe enough to be a problem in the practice of dentistry, and the faculty were unaware of the student's condition until problems arose in the D2 year. In another situation, the student's academic performance was unacceptable and remediation could not correct the issue. In yet another situation, a student was dismissed for failing to disclose all required information at the time of application to dental school.

University Of Texas – Houston

Yes. We have had instances of ethical, academic and motivational deficiencies.

University of Texas- San Antonio

Of course, and, while highly undesirable, I believe that this is entirely predictable. Relatively few will fail out for academic reasons. A few students will fail to demonstrate hand-skills in laboratory courses and will fail to remediate. Others will get to the clinic and fail to achieve confidence of their instructors due to lack of judgment or clinical skills. Others will realize that they just don't want to be a dentist and will drop out or commit, "suicide by instructors".

University of Tennessee

We have accepted the occasional student who has behavioral issues related to patient care. Screening for these issues would seem to be impossible. Background checks are done on those accepted, but not applicants. Although self-reported criminal violations are a part of the AADSAS application, we don't think background checks would be likely to pick up on behavior issues.

4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

University of Oklahoma

Very difficult. The last student dismissal occurred two years ago when a student failed to pass Part I of the NBDE prior to entering the third year of the predoctoral program. Most dismissals result from academic deficiencies.

LSU

Students failing to progress are referred to the APAC committee headed by the Associate Dean for Academic Affairs. It is difficult to dismiss a student unless the committee feels the student will not be able to progress. The last student dismissed (2014) was a D1 after the first semester for academic performance (failed multiple courses). There were also some personal issues involved in the dismissal.

Academic Performance? 10

Behavioral? 2

Combination of both? 0

University of Mississippi

Difficult.

Academic Performance?

Behavioral?

Combination of both? BOTH

Baylor University

It is difficult for a student to be dismissed from our institution. Knowing the time, effort and financial commitment a student makes to dental education, every effort is made by the faculty and administration of our dental college to remediate the didactic knowledge and/or clinical skills that a student is lacking so that he/she can continue with his/her dental education and be successful. 2012 was the last time a student was dismissed from our program; the dismissal was for failure on the part of the student to disclose all information requested at the time of application to dental school. In the past there has been the occasional dismissal for poor academic performance which could not be successfully remediated and for behavioral issues. In all instances, the students were given full due process.

University of Texas – Houston

With good documentation, it is relatively easy. Spring 2015 we had 3 dismissals for Academic. Academic Performance? Two (Spring 2015)

Behavioral? One (Spring 2015)

Combination of both? Yes.

University of Texas – San Antonio

Academic Performance?

The Academic Performance Committee meets at the end of each semester and will evaluate each student on a case-by-case basis. Three outcomes are considered: the student can be recommended for remediation (normally accomplished in the summer) if remediation is offered as an option by the course director. If remediation is not offered, or the student has failed more than one course, the student may be offered the opportunity to repeat the year. A student may be recommended for dismissal if more than two classes have been failed or professionalism issues are raised. In the last ten years typically one or two students each year may be recommended for dismissal. As many as seven students have been asked to repeat a year. The student may appeal decisions made by the Academic Performance Committee to the Dean and a few have been overturned on appeal.

Behavioral?

Combination of both?

University of Tennessee

Our school has dismissed a student (due to academic performance) within the last 12 months. This student was previously dismissed (due to academic performance) and given another chance by starting over.

Academic Performance?

When this happens, the student is often offered another chance by re-starting the curriculum. If the student has failed a course, there is no other option than to re-start.

Behavioral?

In the last five years, two students have been identified with substance abuse issues and placed into the proper evaluation / treatment care. While not the same as a dismissal, this care is not compatible with being a student.

Combination of both?

No

5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

University of Oklahoma

No.

LSU

Students having personal issues can get assistance through the Campus Assistance Program (CAP) while they are still enrolled in LSUHSC. There is not a formal program for career counseling once a student is dismissed. Students have been readmitted to LSUHSC after being dismissed and the Admissions Dean is the primary contact for career guidance.

LSUHSC does not give tuition refund for dismissed students.

University of Mississippi

Tuition monies are prorated for the time the student spent at the school.

Baylor University

Our school has no tuition refund policy for dismissed students. With respect to “facilitating career counseling”, students have been counseled by the Associate Dean of Academic Affairs when they are having academic difficulty or are considering applying to a different professional program. If the student applies to another program at another institution, the student’s academic records are requested and provided in accordance with FERPA and other school protocols.

University of Texas - Houston

No. Depending on the time of year, tuitions (or a portion of tuitions) have been refunded. However, it is not required by the U. of Texas System.

University of Texas – San Antonio

Yes. A counselor is available at the University level for intervention or development.

University of Tennessee

Only if requested by the student – which is rare. Tuition refund is possible within first one-third of term.

6) Are students’ tuition insured?

University of Oklahoma

No.

LSU

Tuition is not insured.

University of Mississippi

N/A

Baylor University

No. We have no information on any tuition insurance available to students or on the cost for this insurance should it exist.

University Of Texas – Houston

No. If the student is dismissed for an inability to be in dental school, disability insurance will cover it.

University of Texas – San Antonio

No.

University Of Tennessee

No.

7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

University of Oklahoma

No.

LSU

The dental school has not facilitated a transfer to another professional school at LSUHSC; however, students are encouraged to look at other health care career opportunities.

University of Mississippi

No.

Baylor University

Our school has provided the academic records requested by other institutions considering a former student for admission to their programs.

University of Texas – Houston

No.

University of Texas – San Antonio

No, although this process has been suggested.

University of Tennessee

No.

II. Materials/Techniques/Curriculum

1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

University of Oklahoma

Not in pre-clinic didactic courses.

LSU

Prosthodontics lectures on removal of Zirconia and Emax crowns. Students have kits (Komet) for removal and finishing/polishing ceramic crowns. In addition to the Komet bur, there is a Premier bur that is available at the clinic dispensary.

University of Mississippi

If the treatment to remove the crown is indicated in the clinical setting, then yes. The method used is utilizing #330 burs and crown removal tools.

Baylor University

Not taught specifically but in cases that have arisen, the crowns were removed using 1556 burs.

University of Texas – Houston

No official teaching regarding zirconia crowns. Will depend on practice group/faculty. We do have special zirconia block (primarily for polishing) in the clinic.

University of Texas – San Antonio

No, we do not teach removal of these crowns in restorative. This topic may be taught in crown and bridge. To our knowledge there is no specific bur that they are using other than a new course diamond.

University of Tennessee

Yes, we teach cutting off cemented/bonded Bruxzir and Emax crowns using coarse diamond burs with copious amounts of water. We teach using newly designed burs such as Zircut or 4XR with lots of water irrigation.

2) Does your school teach air abrasion/co-jet techniques?

University of Oklahoma

No.

LSU

Air abrasion preparations are not taught in Operative or Pediatric Dentistry. Air-abrasion (micro-etch) is available in clinic for roughening old composite/porcelain, cleaning crowns, etc. Also, there is a RocaTec abrasion unit available on the clinic floor.

University of Mississippi

N/A

Baylor University

Not taught at BCD

University of Texas - Houston

No official techniques being used directly on patients. Air abrasion only used as a lab procedure to surface prepare indirect restorations (i.e. indirect composites).

University of Texas – San Antonio

This topic is discussed within the context of porcelain repair in terms of air abrading the porcelain prior to etching and bonding procedures. In terms of using air abrasion for caries removal or any other instance we do not teach this.

University Of Tennessee

Air abrasion is mentioned in our D2 Complex Operative Dentistry Course. Air abrasion/co-jet techniques are not taught in the clinic.

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?

University of Oklahoma

None are done in block care clinics (through DS3 year)

What types of cements are being used and where

- 1) Metal-based-Resin modified glass ionomer (i.e. Rely-X)
- 2) Ceramics-Unicem; Calibra (dual cure)
- 3) Post & Cores-Polycarboxylate cement (i.e. Durelon)
- 4) Veneers-Rely-X luting veneer

LSU

35% in undergraduate clinic. Higher percentage in the graduate pros program.

What types of cements are being used and where?

- 1) Metal-based: RMGI (Rely X Luting Plus) or Self-etch Resin (Rely X Unicem2, Panavia SA Plus)
- 2) Ceramics: Lithium Disilicate: Self-etch resin (Rely X Unicem2, Panavia SA Plus; Dual cured resin (Rely X Ultimate). Zirconium: self-etch resin (Rely X Unicem2, Panavia SA Plus); Luting (RMGI)
- 3) Post & Cores: Self-etch resin cement (Rely X Unicem2, Panavia SA Plus, Fluorocore Plus)
- 4) Veneers: Light cured (dual) resin cement (Calibra or Variolink Veneer Esthetic Resin Cement)

University of Mississippi

- 1) Metal-based Fuji cement
- 2) Ceramics Calibra
- 3) Post & Cores Glass Ionomer Cement
- 4) Veneers Composite luting cement

Baylor University

Approximately 35% vs 65%

What types of cements are being used and where?

Rely-X (RMGI) Panavia(resin) Fuji Cem 2(RMGI) Nexus NX3(resin) light and dual cure Variolink Veneer(resin) light and dual cure Polycarboxylate (Duralon)

-1) Metal-based – Rely-X, Fuji Cem2, NX3, polycarboxylate

-2) Ceramics - all

-3) Post & Cores – **Cast post and core, para-post** - Rely-X, polycarboxylate. **Fiber posts**-Panavia, NX3, Variolink

-4) Veneers – Panavia, NX3, Variolink Veneer

University of Texas – Houston

Exact percentage not known, but likely that non-metal crowns are a growing percentage of cemented single units. Third year DDS fixed procedures are done under the supervision of prosthodontists, and the general preference tends to be PFMs for this population. Fourth year DDS fixed procedures are typically covered by general dentist faculty, with an increasing number of zirconia crowns being done for molars. With regard to cements:

- 1) Metal-based – luting cements (ex. Rely X Luting)
- 2) Ceramics – self-adhesive universal resin cements (ex. Rely X Unicem) have become popular, with selective etch in enamel
- 3) Post & Cores – self-adhesive universal resin cements or luting cements, depending on material
- 4) Veneers – Clearfil SE esthetic cement, Rely-X Veneer cement (Light-cure resin cement) and Variolink II (Dual-cure resin cement)

University of Texas – San Antonio

What types of cements are being used and where

-1) Metal-based- Ketac Cem, RelyX Luting Plus

-2) Ceramics- RelyX Luting Plus or bonding with Choice2

-3) Post & Cores-RelyX Luting Plus for the post

-4) Veneers- Choice2

University Of Tennessee

Approximately 70% of all crowns delivered in the clinic are all-ceramic crowns, and 30% of the crowns are PFM.

What types of cements are being used and where?

-1) Metal-based

-2) Ceramics

-3) Post & Cores

-4) Veneers

RelyX-Unicem or Fuji Plus are used for full cast, PFM, and PFZ restorations, and Multilink Automix is used for all-ceramic restorations.

4) **Is your school considering removing amalgam from curriculum?**

University of Oklahoma

No.

LSU

LSU is not considering removing amalgam from the curriculum at this time. However, the September JADA article (Assessing Occupational Elemental Mercury Exposure in US Dentists) has initiated some off the record discussions.

University of Mississippi

No. Amalgam is still the material of choice chosen by patients due to finances. At times this is also the material of choice due to patient age, hygiene compliance, isolation issues, parafunctional habits. Is the decision evidence-based? At our school there is \$15-\$50 difference between choosing amalgam vs. composite of the same surfaces. There is evidence that amalgam wear and composite wear are different, and that microleakage of composite will be great if isolation is a concern.

Baylor University

No. Amalgam is still considered an excellent choice for posterior restorations. It is economical and less technic sensitive than composites, gold, or ceramic restorations.

University Of Texas – Houston

No.

University of Texas – San Antonio

At this time we are not considering removing amalgam from the curriculum because we have a largely high caries risk population for which large cuspal coverage restorations are being performed in areas where complete isolation is impossible.

University of Tennessee

No, we are not considering removing amalgam from the curriculum.

5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

University of Oklahoma

Cast gold restorations are being taught as the optimal restorative option in certain clinical situations. Metal-ceramic restorations are utilized as a substitute.

LSU

Gold onlay and inlay restorations are taught in the D1 Operative course. This includes lecture and lab (preparation & wax-up, no casting). Interested students with appropriate patients can do gold restorations in clinic during the D3 and D4 years (no requirement). Prosthodontics does teach gold crowns in pre-clinic and provides this service in clinic. Full contour Zirconia or Lithium Disilicate crowns are commonly considered as an alternative to FG at this time.

University of Mississippi

Cerec

Baylor University

Direct gold restorations are no longer taught. We use and will continue the use of gold for crowns and onlays. The only substitutes we have are complex amalgam restorations, PFM's, ceramic crowns, inlays and onlays. We do not do indirect composite restorations.

University of Texas - Houston

Gold is still taught preclinically, especially for inlays, onlays, and single unit crowns, but is not performed as often in clinic as it might have been perhaps 10-15 years ago. No official discussion of how it might be replaced in the future, although zirconia has generally become popular for posterior crowns. Most inlay/onlay restorations are currently been done as resin indirect restorations.

University of Texas – San Antonio

As pre-clinical exercises the students are taught how to prep for gold, PFM, monolithic zirconia and zirconia with a facial veneer of porcelain. With the cost of dental gold ever increasing we have seen that its use has decreased significantly over the last decade. In more recent years, gold and PFM has been almost completely replaced with monolithic zirconia in the posterior and a facial veneered zirconia in the esthetic zone. We are currently not using base metal as a substitute for high noble gold and we do not really know why...

University of Tennessee

The use of gold alloy as a restorative material and full gold crown (FGC) techniques are still being taught in pre-clinical courses. However, there is a decline in the use of gold in the clinic due to cost and esthetics.

What are you using as a substitute? Monolithic zirconia is being used as an alternative to FGC.

- 6) **Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?**

University Of Oklahoma

No. There are required clinical skills assessment and competency examinations that require the student to prepare teeth with primary caries lesions. This is part of the criteria for a tooth to qualify for an examination procedure.

LSU

It is not possible to graduate without experiencing primary caries. There is a large pool of patients that need operative treatment and have had limited past dental treatment. Students do graduate without ever treating a primary tooth. Students have specific requirements in D2 and D3 Operative (class 1& 2 amalgams, class 1 & 2 composites, class 3-4 composites, D2 & D3 numerical requirement) that ensures a spectrum of treatment by every student.

University of Mississippi

No (i.e. only experience replacement of defective restorations).

No

We have a set of recommendations for operative clinic course that needs to be met prior to attempting a set of 4 competencies. These competencies cannot be on teeth with existing restorations and caries removal is part of the rubric that is graded for each competency.

Baylor University

All of our students have ample experience removing primary caries. What do you do to ensure that students are getting adequate training/experience? Competency exams require the students to select cases that have active caries. The number of restorations that must be completed in 3rd and 4th years seems to supply adequate experience with decay removal. Extracted teeth are used in pre-clinical lab to introduce students to caries detection and removal. Students having difficulty with caries removal are required to do remedial training using extracted teeth.

University of Texas – Houston

No. Theoretically this is possible (but highly unlikely) for daily clinical experience units, But competency exams (as well as mock boards) have an acceptance criteria of at least one carious surface. Practically, the patient population is such that primary caries management and evaluation is almost inevitable.

University of Texas – San Antonio

No, we have skills assessments that require removal of initial dentinal caries. As juniors and seniors they are required to do a Class 3 and Class 2 composite skills assessment which must be an initial caries lesions. They are also required to complete a class 2 amalgam both years with may be either an initial lesion or recurrent caries. In addition to these skills assessments, as seniors they must complete one initial lesion, either class 2 or 3, for the mock board exams.

University of Tennessee

No, it is not possible for a student to graduate and never experience primary caries removal. If so, is this a concern? Not applicable.

What do you do to ensure that students are getting adequate training/experience?

Before they graduate, every dental student must complete a caries removal project on a patient or an extracted tooth. Also, in our clinical competency examinations at least one tooth surface must have a virgin carious lesion.

7) How does your school manage rampant caries patients? Please provide evidence where possible.

University Of Oklahoma

In patients with rampant caries, we attempt to treat all large cavitated lesions with either temporary or permanent restorations as early as possible. We generally place these high-risk patients on a supplemental fluoride treatment regime, which may include fluoride varnish, Prevident 5000 toothpaste, and sometimes fluoride trays. We do not generally utilize chlorhexidine rinses in our clinics, however we are looking into the Chorhexidine/Thymol varnish (Cervitec Plus, Ivoclar) for use in the future for patients with rampant root caries.

LSU

There is a caries risk assessment module in axiUm. The Endodontic department has a program for rampant caries patient. D3 or D4 student works with endodontic resident to do quadrant dentistry at one price to remove caries/start endodontic treatments. This has only been done on a minimal number of patients. Most rampant caries patients become denture patients due to costs.

University of Mississippi

Patients are treatment planned to have phase 1 treatment where after prevention, all caries is removed and restored and diet analysis, pt is placed on appropriate hygiene recare. If patient is demonstrating good hygiene, and diet compliance we can proceed to phase 2. Patients are also placed on FI- regimen. Please provide evidence where possible. FI- is shown to have anticavity effects.

Baylor University

The program for treatment of rampant caries resembles the Rampant Caries Control Program (RCCP) developed at the University Of Iowa College Of Dentistry. After the patient is admitted, diagnosed, and commits to treatment, emergency care is provided, such as endodontics and extractions of un-restorable teeth. Next, the patient under goes Oral Disease Risk Assessment (ODRA) followed by the elimination of infection which consists of caries removal and placement of transitional restorations of fluoride releasing glass ionomers (Fuji IX). Sealants may be placed at this time to prevent new infection. Following this phase, preventive treatment is initiated. This may include high fluoride toothpaste and or fluoride rinses, chlorhexidine rinses, xylitol gum, changes in diet and home care instructions. This phase is monitored for a sufficient time and re-evaluated for the next phase of permanent restorative procedures. Follow-up and maintenance are established. Evidence: see –

Management of High Caries Risk and High Caries Activity Patients: Rampant Caries Control

**Program (RCCP); Sandra Guzmán-Armstrong, D.D.S., M.S. and John J. Warren, D.D.S., M.S.
2007 Journal of Dental Education**

University Of Texas – Houston

No rampant caries-specific protocol. Caries management is based on risk assessment (we generally align with CaMBRA); rampant caries patients would fall into the “high risk” category. Management includes OHI, three month-recall for fluoride varnish, rx of 5000 ppm F-toothpaste, and OHI. Appropriate preparation and restoration of cavitated lesions. Fluoride and caries protocols generally in line with ADA 2013 (fluoride) and 2015 (caries) evidence-based guidelines.

University of Texas – San Antonio

We teach treatment in phases urgent care, patient education, oral hygiene instructions, use of fluoride releasing glass ionomers, fluoride trays, etc.

See attached caries management protocol which is based on an oral health risk assessment completed by the students during the new patient exam process.

University Of Tennessee

We have a clinical protocol in place for treating rampant caries patients. Caries risk assessment is done in the Oral Diagnosis Department during the initial patient examination. Patients are assigned to one of three caries risk protocols (low risk, moderate risk, or high risk). The protocol for high risk caries patients addresses rampant caries and subsequent therapeutic care. The restorative goal is to provide the patient with quadrant dental treatment for the following:

(i) caries removal; (ii) the patient to demonstrate acceptable oral hygiene, and (iii) improved treatment outcome and prognosis.

The objective is to avoid full coverage and definitive restorations until the patient learns to improve nutritional intake and demonstrates adequate oral hygiene. The protective Restoration Code, D2940, will be treatment planned and either a resin modified glass ionomer material (Fuji II LC) or restorative glass ionomer material (Fuji IX) will be used during caries control. Topical fluoride varnish applications are applied to the treated teeth at each visit until the patient is assessed at the level of low caries risk assessment. MI Paste and MI Paste Plus are also available for use on these patients.

A recall regimen is established in intervals of three months or as needed. The objectives of the recall appointments are as follows: (i) re-evaluate caries risk; (ii) identify diminished risk factors or improved protective factors, and (iii) to evaluate periodontal status.

At the completion the Rampant Caries Protocol the dental student and his/her group leader together evaluate the patient's comprehensive treatment plan for definitive restorative care and recall visit schedule.

8) What efforts do you make to give all students a uniform experience in clinic?

University Of Oklahoma

With a new global point system in our clinics, we are attempting to make sure that the students' first concern is to treat the needs of their assigned patients without regard for a required number of specific procedures required for graduation. Currently, the only way that we can attempt to assure a uniform clinical experience is to have our group practice directors assign a sufficient number and variety of patients to each student to provide them with a broad range of clinical experiences prior to graduation.

We are currently trying to develop a "vertically integrated" team approach in clinical group practices that will allow a specific set of students to share the treatment needs of the patients assigned to their group practice. These teams will be made up of second year dental hygiene students, and first, second, third and fourth year dental students. This would allow procedures to be allocated to the members of the team to provide them with a better variety of procedural experiences, which would be assigned based on the student's level of clinical experience.

LSU

D2 and D3 have specific requirements to meet that result in a more uniform experience. D4 students are paired with a Team Leader. Team Leaders "cross pollinate" to balance their experience with the student needs. Students that are progressing faster are given more complex cases to treat, and occasionally vice-versa.

University of Mississippi

Patient care coordinator preselects screening patients in an attempt to give a diverse set of patients to each student. We then have competencies and prerequisites/ recommendations that are similar for each student.

Baylor University

The number of patients which student has seems to be an adequate sample of restorative treatments for students to complete their essential experiences. Students are assigned patients according to the preliminary diagnosis. If a student does not have enough patients with enough essential experiences, more patients will be assigned to him to provide adequate experiences in all the essential disciplines.

University Of Texas – Houston

Attempts at calibration sessions for faculty have been made during the summer in various years. Scheduling of calibrating pre-clinic faculty in clinic aids in normalizing the experience for students.

University of Texas – San Antonio

Each department has expectations that must be met in order to receive a passing grade in a course. All courses must be passed in order to graduate. Requirements in operative dentistry are both quantitative and qualitative with grades on skills assessments and production taken into account before awarding a final grade. It is possible based on the grade scale to receive a 2.5 for all the skills assessments required and still receive a high score in the course based on completing an enormous amount of operative procedures. The idea is that completing more clinical procedures will give the students more practice letting them overcome any possible test anxiety and unforeseen mishaps during a high stakes skills assessment.

University of Tennessee

We believe the key to providing a uniform clinical experience for our students is the calibration of our group leaders in the General Practice Dentistry Department. In this regard, we make every effort to calibrate the group leaders to our Restorative Dentistry Department clinical guidelines. Each group leader must read and be thoroughly familiar with a calibration manual which outlines the Restorative Dentistry Department techniques and materials used in all of our pre-clinical courses. Pre-clinical faculty work with the group leaders in the clinic, and several group leaders teach in the pre-clinical courses. Also, group leaders monitor the patient portfolios to insure similar patient experiences for their students.

9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

University of Oklahoma

Esthetic procedures taught in our operative preclinic labs include anterior and posterior resin composites. The students are taught to utilize the various shades and opacities of our resin composite restorative system to restore Class I, II, III, IV, and V lesions. Resin modified glass ionomer is also taught to restore Class V lesions, especially for lesions on the root surface. We also have a preclinic session on external tooth whitening with the fabrication of custom trays for at-home application.

Esthetic procedures taught in FPD preclinic labs include metal-ceramic crowns, full-ceramic crowns, porcelain veneers and custom esthetic provisionals.

These procedures are taught in integrated courses.

LSU

A six week esthetic course is taught by the Prosthodontic department. This consists of lecture and pre-clinic lab in the D3 year. The lab is a veneer prep, fabrication, and cementation.

In D1 Operative, students receive a lecture & lab on diastema closure. In D3 Operative students receive lectures on bleaching and veneers. The students are also introduced to CAD/CAM techniques and ceramic onlays starting in the D2 year.

University of Mississippi

Smile design, whitening trays, anterior wax ups, veneers preparations and restoration with composite, peg lateral restoration with composite, diastema closure with composite.

The Care Planning and Restorative department hosts the main faculty including gen dents, prosthodontists who lecture in this course, there are also lectures provided by an oral surgeon, orthodontist, and periodontist.

This D2 course is an introductory course and interdisciplinary and stands alone. Principles of esthetics is covered in other courses in fixed and removable courses and periodontics.

Baylor University

Esthetic procedures are taught in Operative and fixed pre-clinical labs. Class 3, 4, and 5 composites are taught in operative on both typodont and extracted teeth. Porcelain veneers, ceramic fused to metal and all ceramic crowns are taught in fixed lab. Other esthetic procedures are taught in the D4 year.

University of Texas - Houston

All pre-clinic restorative courses originate in the Department of Restorative Dentistry & Prosthodontics. Initial composite exposure (including diastema closure) occurs in Operative Dentistry I and Operative Dentistry II (1st and 2nd year DDS). Esthetic Dentistry taught in its own course (3rd year DDS) by esthetic faculty in the department – procedures include bleaching, layered composites, diastema closure, veneers, esthetic onlays/crowns. All course directors are general dentists for these courses.

University of Texas – San Antonio

Esthetic dentistry is taught in a number of courses and in preclinical labs. RESD 7050 is a week long course that covers bleaching, esthetic composites, veneers, and porcelain repair. This course includes lectures and lab components. Dr. Bill Robbins presents a day and a half training program to seniors on altered passive eruption, esthetic crown lengthening, and global diagnosis of smile design. Sophomore restorative lab course has two sessions on multi-layer composites using Vital Essence and we are incorporating Filtek Supreme into the curriculum and the clinic.

University of Tennessee

Anterior and posterior composite resin, glass ionomer, and CAD-CAM (CEREC) restorative techniques are taught in pre-clinic labs.

Who teaches (what department)?

The Restorative Dentistry Department teaches direct esthetic restorative techniques and CAD-CAM. Both the Restorative Dentistry and Fixed Prosthodontics Departments teach indirect esthetic procedures, including CAD-CAM.

Are esthetic procedures taught in an integrated course or in separate courses?

Esthetic procedures are taught in both integrated and separate courses. Esthetics is integrated into all D1 and D2 operative dentistry lecture and laboratory courses and in the D1 Biomaterials course. There is also a D2 operative dentistry lecture and laboratory course dedicated to esthetic dentistry.

10) Is infiltration of proximal caries with resin taught in pre-clinics or clinically?

University Of Oklahoma

No.

LSU

Infiltration of proximal caries is discussed in Operative D3 literature review. It is not an option in restorative clinic.

University of Mississippi

N/A

Baylor University

No, not taught in pre-clinical or clinical courses and is not a treatment option.

University of Texas - Houston

No, not yet. Literature is favorable for this technique, but faculty do not have enough experience with it to teach it yet. Has been done in faculty practice on smooth surface (facial) white spot lesions on anterior teeth, but not interproximally yet.

University of Texas – San Antonio

Not at this time.

University Of Tennessee

Resin infiltration is mentioned in a D1 Operative Dentistry Course lecture under the topic “Minimally Invasive Dentistry.” The procedure is not taught in preclinical laboratory courses.

11) What are the materials and selection criteria for complex posterior restorations?

University Of Oklahoma

The materials that we utilized for the direct restoration of posterior teeth include amalgam (Dispersalloy) and a microhybrid resin composite (EsthetX).

We select the material based on several criteria:

Generally, resin composite restorations are reserved for fairly conservative cavity preparations.

Contraindications for resin composite in posterior teeth are:

- Extensive cavity preparation that involve the replacement of large portions of cusps.
- Cavosurface margins in dentin/cementum.
- Inability to effectively isolate the tooth.
- Patients with extremely high caries risk due to rampant decay
- Presence of bruxing or heavy occlusal stress on larger restorations.

In instances where resin composite is contraindicated, we normally recommend amalgam for the restoration of the posterior tooth. For areas where an esthetic restoration is essential, we may recommend a ceramic onlay or crown.

LSU

There are no specific guidelines or selection criteria for posterior restorations. If a complex composite has been treatment planned the Operative instructor or Team Leader has the option to change the treatment. Materials available include z-100 and Multicore. A study to evaluate failure of restorations at LSU dental school was begun in the 2015-16 academic year. This study may lead to guidelines for the clinic in the future.

University of Mississippi

Materials include paracore and microhybrid composites. Selection criteria are whether isolation is possible, whether composite is the definitive restoration or a build up prior to full coverage.

Baylor University

D3 students can use amalgam or gold onlays for complex posterior restorations. D4 students can add ceramic (e-max) to treatment. Zirconia is not presently being used.

University Of Texas - Houston

Basic principles taken into account are occlusion, ability to isolate, estimated amount of time without full indirect cuspal coverage, and patient preference. Microhybrid composite (Filtek Z250) is the typical resin material. For amalgams, requirement of two types of retention is taught (ex. Pin plus amalgam bonding).

University of Texas – San Antonio

Ideally amalgam. Is this happening clinic wide? Not too sure...more practically people are probably using traditional packable composite and preparing the tooth for a crown during the same visit.

University of Tennessee

Indications for composite posterior restorations include:

- Composite restorations are usually recommended for teeth in the esthetic zone (anterior teeth & mesial surfaces of premolars) and conservative posterior restorations.
- Recommended for patients allergic to amalgam.
- Patient having a preference to composites due to esthetic concerns.
- Patient concerns about mercury.

Contraindications for composite include:

- Multi-surface or large restorations involving a cusp replacement.

- Inability to control moisture.
- Subgingival preparations.
- Patients that exhibit bruxism and severe wear.
- Patients allergic to composite.
- Preparation involving high occlusal stress.
- Cavosurface margin not on enamel.

Indications for complex amalgam restorations include:

- Should be considered when large amounts of tooth structure are missing and when one or more cusps need capping (shoeing).
- Provisional restorations in teeth that have questionable pulpal or periodontal prognosis.
- Provisional restorations in teeth with acute and severe caries.
- Definitive final restorations.
- Foundations for full coverage indirect restorations.

Contraindications for amalgam include:

- Significant occlusal problems.
- The tooth cannot be restored properly with a direct restoration because of anatomic or functional considerations.
- Patients have esthetic concerns.
- Patient concerns about mercury

12) How often are onlays provided as treatment vs. full crowns?

University of Oklahoma

About 10% of posterior gold restorations are onlays.

LSU

Gold & ceramic onlays <2% vs full crowns.

University of Mississippi

Not often.

Students are introduced to onlay preparation as part of their D3 orientation and that they can treatment plan this as an option for a tooth using the CEREC system. There is 3-5 completed per year at most.

Baylor University

Gold onlays are used infrequently in operative, but that choice is available for D3 students. D4 students can do ceramic onlays. More are done there for esthetic reasons).

University Of Texas - Houston

Very rarely, especially in the case of gold. More common scenario is initial treatment plan of inlay which becomes an onlay due to lack of cuspal strength post-preparation.

University of Texas – San Antonio

Extremely Rare... We have done 1 in the last 10 years that we know of.

University of Tennessee

All onlays delivered at the clinic are fabricated with CEREC. Out of 182 CEREC restorations delivered

last year approximately 50% were onlays.

13) Are Bioactive Materials being used in Enamel Remineralization in your school?

University of Oklahoma

No.

LSU

MI paste is available to remineralize enamel. Patients are also given prescriptions for Prevident 5000.

University of Mississippi

N/A

Baylor University

Use of bioactive materials for remineralizing enamel or dentin is not being used or taught at BCD.

University of Texas - Houston

Yes, MI paste and RMGI (Fuji II LC) and GI (Fuji IX)

University of Texas – San Antonio

Recaldent GC MI paste Plus, Clinpro 5000

University of Tennessee

We have MI Paste and MI Paste Plus available in the clinic, and the use of these materials is specified in the moderate and severe caries risk protocols. Their use is at the discretion of the supervising faculty.

Biodentine is available for use in the clinic.

14) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

University of Oklahoma

Yes, we utilize both options of pins and/or Amalgambond in instances of cusp replacement or when retention needs to be enhanced.

LSU

Pins are taught (lecture/lab) in the D1 and D3 Operative courses. Max and TMS pins are available in clinic. Bonding of amalgams (including amalgabond) is not taught at LSU.

University of Mississippi

Yes we use minim/ minkin pins in clinic and the all bond system for adhesive amalgam bonding.

Baylor University

Pins are available for use with amalgam – usually for complex amalgams and core build-ups. AllBond II was being used to bond amalgam. Since switching to AllBond 3, amalgams are no longer being bonded.

University of Texas - Houston

This technique is still taught pre-clinically, but not performed very often in clinic.

University of Texas – San Antonio

Yes, we use both pins and Amalgambond when indicated. We do teach preclinically to make amalgam slot preps with retention grooves, but then immediately advise the students that grooves are difficult to do in the clinic. Clinically we ask that they do an amalgam slot prep and use amalgam bond for retention. We teach that HPA powder should always be used when using Amalgambond Plus. Liners, Bases, and Cements. Which ones are being used for what purposes?

University of Tennessee

Amalgambond is not used. Retention pins have limited use. Only two retention were placed in the clinic last year. The use of pins is mentioned in preclinical courses, however we are considering dropping pin placement exercises from our preclinical laboratories.

15) Liners, Bases, and Cements. Which ones are being used for what purposes?

University of Oklahoma

Calcium hydroxide (Ultrablend) - in areas within 0.5mm of the pulp
Resin modified glass ionomer (Vitrebond) – in areas within 1.0 mm of the pulp; and also is used to cover the calcium hydroxide material when placing amalgam to protect it from condensation forces.

LSU

CaOH (Life): pulp capping, some instructors use as liner
RMGI (Vitrebond): liner for deep preparations, over CaOH
RMGI/GI: Fuji IILC, Fuji IX: base under indirect restoration, blackout, temporary, final restoration.

University of Mississippi

GC liner is used for both amalgam and composite restorations if there was extensive decay removal and we are 1 mm from pulp. If half mm from pulp, we put CaOH for both indirect and direct pulp capping.

Baylor University

Liners – TheraCal, CaOH with RMGI cover – both are used for direct and indirect pulp capping.
GrandiOso flow sometimes used in deep gingival floors.
Bases – Fuji IX and polycarboxylate cement for blocking undercut areas in preparations
Cements – see 3) above.

University Of Texas – Houston

Pulp Capping – TheraCal LC
Liner – Vitrebond
Bases – not typically called for, although glass ionomer (Fuji IX) or resin modified glass ionomer (Fuji II LC) may effectively serve as a base in sandwich (open or closed) technique at discretion of faculty
Cements – see answer to II.3.

University of Texas – San Antonio

We teach Dycal/Vitrabond and Ultrablend Plus as liners for indirect pulp caps. We do not normally teach bases under direct restorations. The cements that we have available are Ketac Cem, RelyX luting and Choice2 resin cement. We teach that dycal and vitrebond should be the only material used in an iatrogenic pulp exposure. For indirect pulp capping the students can select either dycal/vitrebond or ultrablend plus and for the most part students choose ultrablend plus for convenience. See the cement usage list from question 3 in this section.

University of Tennessee

Liners: Dycal, Fuji II Lining Cement, SureFil SDR Flowable, and Biodentine.

Bases: Fuji LC, SureFil SDR Flowable, Durelon, and IRM.

Cements: RelyX-Unicem, Fugi Plus, and Multilink Automix.

III. Student/Program Assessment

1) Are faculty or students evaluated or rewarded based on clinical production at your school?

University of Oklahoma

No.

LSU

Production is not a factor for D3 year. There are specific clinical requirements in the D3 year. In D4 year production as a goal is only one factor for evaluation. In the D4 year, what is stressed to the student (and graded) is that they are expected to maximize their clinical experiences by having a patient scheduled for every clinical session. The student is also graded on their management and treatment of their mini-clinic patients.

University of Mississippi

Yes.

Very complicated answer. We are recently utilizing the RVU system. There are relative value units assigned to each procedure. This was initiated so that faculty compensation could be calculated. In the preclinical areas, it can be imbalanced because there is a lot of time spent on diagnostic gathering and treatment planning but the RVUs are low. Then the faculty who cover procedures that are more costly will receive more RVU's. Our department chair has tried to balance this by having faculty cover on both sides. For students there is a yearly goal set that they need to meet and this benchmark is attainable.

Baylor University

Faculty are not evaluated or rewarded based on clinical production of students at our institution. Students are evaluated to some degree based on their clinical production, that is, the completion of their essential experiences in the various clinical disciplines. Students take progress exams to determine progress toward clinical competency but these are only part of the equation. Students need to perform a number of essential experiences in order to develop their clinical skills. These clinical skills are necessary for the student to successfully matriculate from the D3 year to the D4 year and for the student to be judged as competent in order to graduate at the end of the D4 year.

University Of Texas – Houston

Faculty – no. Students, in a certain sense, yes. Students are expected to have a certain minimum number of clinical experiences in any given discipline; completion of this quantity typically

achieves a minimal scores for the course (ex. 70 out of 100 possible). Production beyond the minimum typically relates to a higher score for the course.

Opinions may vary about the validity of rewarding production. On the positive note, it may encourage efficiency and good patient management. However, especially in this age of conservative and evidence-based practice, it might send a confusing message – reward for “production” (ie. surgical procedures) does not incentivize prevention and disease arrest.

University of Texas – San Antonio

Faculty Incentive Pays have been distributed twice a year for the last several years depending on the availability of funds, we have no evidence of being rewarded for production based on the students’ performance...however, we actually have no idea how we are incentivized...this portion of our pay has never been well explained to anyone.

For students, the Dean of the Dental School has been quoted saying, “The more you earn, the more that you learn.” Most courses include award for productivity. Production and clinical productivity are stressed as a part becoming more competent clinicians.

University of Tennessee

No, though a senior award is given at graduation based on most clinical production in conjunction with quality of the services. No Faculty incentive pay for student production.

Do you think this is a valid method of assessment? No. Why? Why not?

It might lead to an excess of treatment being planned in order to gain rewards. This is not the way to instill ethics in students. This type of “cherry picking” has been seen in some schools that do reward based on production or “dollars brought into the school”.

2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

University of Oklahoma

Maintaining “operative dentistry” as its own discipline may be a challenge. Active member involvement with strong leadership of organizations such as CODE and the Academy of Operative Dentistry will be integral in doing so, but is no guarantee. Regardless of curriculum structure or delivery of patient care philosophy, there would still be a need for individuals who focus on staying abreast of the changes that constantly occur in the areas of caries management, adhesive bonding, direct restorative materials, etc., and the teaching of those concepts and skills. So yes, we definitely feel that there is a need for the discipline of “operative dentistry.”

LSU

Tough question to answer!

The science of bonding and the field of dental restorative materials are becoming much more complex yet there is less experience among the school faculty. The restoration either direct or indirect of individual teeth should be part of operative dentistry. Esthetics is also an important part of this discipline which includes bleaching. At LSU most of the specialty departments (including prosthetics) have very little training in current Operative Dentistry techniques and associated materials. Operative Dentistry needs to retain its own identity or restorative treatment will go the way of gold foil. The concept that every tooth problem will be solved by a crown or an implant is inappropriate tx planning.

University of Mississippi

For comprehensive oral health, disease control is a necessity. Caries falls into the category of disease control.

Clinical caries process that can be controlled once a clinician surgically enters the tooth and removes affected tooth structure and restores it with material so that tooth can function as it should.

Yes in school setting.

Baylor University

Operative Dentistry should continue to be taught as a specific discipline within the more general category of restorative dentistry or general dentistry. Identification and treatment of caries, remineralization therapies, minimal tooth preparation and restoration when indicated and as minimal as possible tooth preparation when larger restorations are indicated should all be included as part of the identity of operative dentistry. Operative Dentistry should retain its own identity because it is unique and different from other dental disciplines.

University Of Texas – Houston

Yes, operative dentistry should retain its own identity as a discipline. Generally speaking it represents the intracoronal management of tooth destruction. At a more basic level, it is the philosophical intersection of cariology, biomaterials, and clinical practice. These core distinctives should be embraced and furthered.

University of Texas – San Antonio

In general restorative dentistry has been diminished in that now we no longer have a dept of operative dentistry. We are now part of a large mega department of comprehensive dentistry. We once had 30 operative dentistry content experts and we are now down to 3. This forces the same person to continue being the operative course directors and leaves operative dental education hanging on a slippery slope when any of the three people retire.

University Of Tennessee

Operative dentistry should retain preclinical courses in its own discipline and should retain the same faculty teaching preclinic as clinic in order to provide a good translation of the material from preclinic to clinic.

In addition, Operative Dentistry should maintain its own identity within dental schools and should not be combined with any other department/discipline other than Esthetic Dentistry and Biomaterials, both of which are included in our department called the Department of Restorative Dentistry. With the inclusion of Esthetic Dentistry, our students are exposed to single unit restorations such as direct, extracoronal, and intracoronal restorations (fillings, composite veneers, composite cores, amalgam cuspal protection, and cerec restorations).

Operative dentistry encompasses fundamental core concepts that require extensive oversight/supervision/and step-by-step intensive instruction to the pre-clinical students; thus ensuring that the learning objectives are met at an above standard degree. If Operative Dentistry is no longer a separate entity, then students will not benefit to the same degree to which they are currently exposed. The quality of learning may suffer and faculty will have a greater potential of bumping heads especially with the specialist that will now be incorporated into one “Super Restorative Department”.

We must also consider the dental materials that are currently being used and taught within the dental curriculum. An Operative Dentistry Department can ensure that our students are kept abreast of the latest developments in materials and are thoroughly taught how to use

these materials in conjunction with prep and restoration design and can insure that what is taught to students in lab carries over into clinical applications.

3) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

University of Oklahoma

We participate in the WREB clinical licensing program and we are not considering moving towards a non-patient exam, or any other alternative.

LSU

Yes, CITA/ADEX. Clinical (live patient) board exam is a requirement for licensure in Louisiana. This is mandated by the State Legislature and is not a decision made by the school. The school does make the decision to be a site for the CITA/ADEX Exam.

University of Mississippi

NERB clinical boards.

Baylor University

Yes, our school still hosts a traditional clinical board exam. The state of Texas recognizes the Western Regional Examining Board exam (WREB), the Central Regional Dental Testing Service exam (CRDTS), the Commission on Dental Competency Assessments exam (aka American Board of Dental Examiners or ADEX, formerly NERB), the Southern Regional Testing Agency exam (SRTA), and the Council of Interstate Testing Agencies exam (CITA), all of which have patient based components. If and when the state of Texas decides to accept other dental boards which are non-patient based, our institution may make changes toward the non-patient based board exam.

University of Texas – Houston

Yes. No alternatives on the horizon.

University of Texas – San Antonio

We only offer the WREB to our students. There have been no discussions that we know of about moving to non-patient based board exams.

University Of Tennessee

Our school hosts SRTA/CITA exam as that is what is required for licensure in our state and the surrounding states and in all those states in which our graduates are planning to practice. The alternative would be an all manikin exam which we would support in an effort to reduce patient problems; however until the State Boards change their licensure requirements, we cannot make a change that would impact the ability of our students to practice their profession upon graduation.

4) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

University of Oklahoma

We have E4D software, but it is a work in progress. Probably 1-2 years away from meaningful utilization, but the college is still committed to the prospect.

LSU

From what was seen at a CEREC 30 breakout session, Sirona's Prep Check is better, but still has a long way to go. Other Simulation software/hardware are interesting, but needs further development. Expense of this technology will always be an issue for schools and students.

University of Mississippi

N/A

Baylor University

This year in the pre-clinical fixed prosthodontic course, the E4D Compare software system is being introduced. The second year students will tour the E4D factory and laboratory and be introduced to the E4D Compare software; they will learn to use the system on their typodonts upon which they have each prepared a particular tooth for evaluation. Later on in the fall and spring semesters, each student will have the opportunity to have certain preparations evaluated by the E4D Compare system. This system will not replace faculty grading for this course, but will be an adjunct to teaching in the pre-clinical fixed prosthodontic course. Students will continue to have pre-clinical laboratory practical exams each of which will be graded by two of the attending faculty members; the practical grade is the average of the two faculty grades.

University of Texas – Houston

At the moment, we are running a pilot research study to create a protocol for preclinical operative grading.

University of Texas – San Antonio

We don't use this software.

University Of Tennessee

We do not currently use any of the digital imaging software for grading. We hope that when/if we get the new CEREC units and Dr. Fox comes for training we can set aside some time for him to do a demo of the prepCheck software for the Restorative and Fixed faculty during a lunch break.

The future seems very promising for using the software. Everything depends upon someone learning how to use it and the school being able to afford the price of the software. Iowa has been comparing the two and they seem to be OK, but the students complain that it takes too much time for them to use it.

We had previously Beta tested the Sirona prepCheck but have never seen the finished version.

- 5) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a “one and done” approach? Please provide rationale for the choices.**

University of Oklahoma

OPERATIVE DENTISTRY:

Pre-clinical:

In the first year operative preclinical course there are six skills assessment examinations (Class I amalgam preparation, Class I composite insertion, Class II amalgam preparation, Class II amalgam

insertion, Class III composite preparation, Class IV composite insertion) that are administered and evaluated by our operative department faculty. In this course, students must pass each of the six skills assessment examinations to pass the course. If a student fails an exam, they are given an opportunity to remediate the examination. If the student fails again, they are required to complete a series of practice procedures on their typodont prior to being eligible to retake the exam again. This type of one on one on-going remediation is continued until the student can independently pass the exam. The rationale for making these exams pass/fail for this course was to prevent students from passing the course without having at least once completed each type of procedure successfully. We found that when we simply averaged the six preclinical exams, some students may never have mastered certain skills such as finishing and polishing resin composite restorations. They could perform well enough on the other types of exams to raise their course grade to a passing level. We feel that the requirement that they pass each individual exam better identifies and addresses their deficiencies before they progress to the next preclinical course.

In the second year operative preclinical course there are also six skills assessment examinations (2 Class II amalgam preparations, 2 Class II amalgam insertions, Class II composite preparation, Class II composite insertion) that are administered and evaluated by our operative department faculty. These exams cannot be retaken. In this course, students are required to make a passing grade in the course (which includes the average grade of their skills assessment exams combined with their scores on daily lab procedures). The last two exams (Class II amalgam preparation and insertion) are considered as a clinical entrance examination. The students are required to pass the last two exams to be allowed to provide patient treatment in our clinical operative course in the spring semester of their second year.

Clinical:

In the third year operative clinical course, the students are required to pass two skills assessment examinations that are administered and evaluated by our operative department faculty. They must complete the exams on two of the three following procedures: Class II amalgam, Class II resin composite, or a Class III resin composite. These clinic skills assessment examinations are graded as pass/fail. The students must successfully complete these examinations to be able to advance into their fourth year clinical group practice course. They may retake the examinations until they demonstrate a “passing” skill level. The rationale for making these exams pass/fail for this course was to prevent students from passing the clinical course without having at least once completed these types of procedures successfully under an examination condition.

The students are also required to complete a series of operative competency examinations during their fourth year comprehensive care group practice clinical course.

Fall semester – Class III resin, Class II amalgam or resin

Spring semester – Mock Board format: Class III resin, Class II amalgam or resin

These are administered and evaluated by the comprehensive care faculty, and the student’s grades are averaged into their course grade. No rationale was provided for these choices.

FIXED PROSTHODONTICS:

Pre-clinical:

Fixed Prosthodontics I: Successfully demonstrate proficiency in preparation of a mandibular MOD onlay and a full coverage crown.

Fixed Prosthodontics II: Successfully demonstrate proficiency in preparation of a full gold crown and a provisional restoration.

Fixed Prosthodontics III: There will be two practical exams (TBD: esthetic preparations and provisionals) given during the semester.

Clinical:

In the block care clinical setting, students are required to complete a minimum of three clinically acceptable cast restorations in order to qualify for advancement to Comprehensive Care supervision. These clinical cases are most often evaluated by a single faculty member.

LSU

D2 Operative course: class 1 amalgam and class 1 composite competency exams graded by 2 instructors. Must pass both to pass course.

D3 Operative course: class 2 amalgam, class 2 composite, class 3-4 composite competency exams graded by 2 instructors. Student must pass all to pass course. Competency is the only time that student is working with little guidance and must make own decisions. This type of exam allows instructor to evaluate not only the skill but the critical thinking of the student.

University of Mississippi

Class I amalgam, Class II amalgam or composite, Class III composite, Class V

Two faculty, one must be full time.

Initial check, isolation, prep/ modification, final prep

Baylor University

In each year, students are assessed on the development of their clinical or hand skills in various disciplines. In D1 Pre-clinical Operative Dentistry, the students take six lab practical exams on various operative preparations and restorations. In D2 Pre-clinical Operative Dentistry, the students take another six lab practical exams. A minimum of two pre-clinical lab faculty members independently grade each lab practical (usually for those students whose work they supervised for the preceding eight to ten laboratory periods), and the course director also independently grades each student's practical. The final grade for the lab practical is the average of the three grades.

In the D3 year, each student takes three clinical exams on patients at times of their own choosing within parameters given by the operative clinical course director. Each exam is timed (2 hours and 45 minutes) and evaluated by two full time clinical faculty members assigned by the clinic director. The clinical exams are a C1 II amalgam preparation and restoration, a C1 II composite preparation and restoration, and a C1 III composite preparation and restoration. Each preparation and each restoration is independently graded by each of the two faculty members who grade on a 0-4 point scale (0 and 1 scores are clinical failures, a score of 2 is average, a score of 3 is above average and a score of 4 is excellent). The two preparation grades are averaged and the two restoration grades are averaged; finally, the averaged preparation and averaged restoration grades are averaged and rounded down to the nearest .5 which becomes the final grade for the clinical examination. In order to successfully pass each clinical examination, each preparation and each restoration must earn an average score of 2.0 or better; failure to do so will result in a failing grade for that clinical examination requiring remediation of the exam. A student failing two attempts of the same clinical operative examination will receive mentoring from a faculty member in the Student Development Office and will not be allowed to repeat the failed exam until that faculty member has completed the mentoring process and judges that the student is ready to remediate the exam.

University of Texas - Houston

N/A

University of Texas – San Antonio

DS2-There are 7 skills assessments with 3 opportunities to retake any failed attempts or if no skills assessments are failed then they have the opportunity to replace one grade. These skills assessments are 3 preps, 2 composites, 2 amalgams. There are 4 in the fall semester and 3 in the spring semester. The operative course directors take turns grading the skills assessments and any failed attempts are verified with the other two faculty.

DS3/4-Class 3 prep and restoration, Class 2 Composite prep and restoration, Class 2 Amalgam prep and restoration. Juniors, the operative content expert in the general practice group (GPG) is the primary grader and any other core faculty is the secondary grader. Seniors, the GPG group leader, which is a general dentist, is the primary grader and any other GPGs core faculty is the secondary grader. All junior skills assessments are photographed and turned into the course directors for review. The seniors are encouraged to photograph their exams as well for review with the group leader in preparation for the board exam.

DS4-During the mock board exams the seniors are graded by a faceless examiner which is usually a GPG leader or assistant leader. For the most part, these people have had some advanced training like AEGD or GPR in their history.

University Of Tennessee

For clinic, we require our students to complete a set number of prerequisites for each type of competency exam before they can challenge that exam. They must also complete a set number of points for all types of procedures first. If the students don't pass their "comps" they must remediate on patients and/or manikins, dependent on faculty recommendation, before they can again challenge the "competency". They must also self-assess and then the faculty assess on the same form thus helping students to develop their judgment skills. A set number of points (requirements) are still required for graduation regardless of whether comps have been successfully completed or not as we believe that this is necessary to develop good judgment skills.

As for pre-clinical courses:

In 2014-2015, the foundation operative course, has 3 practicals and Final practical.

The 3 practicals were:

- Class I preparation #19 O
- Class II preparation #31 MO
- Class II amalgam restoration #30 MOD

The Final practical consisted of

- Class II preparation #19 MO
- Class II amalgam restoration #30 MO.

Students used self-assessment form to evaluate their practicals, followed by faculty evaluation using the same form. Course director grades the practicals from A-F according to her own and the faculty evaluations. Faculty evaluation and gradings are done blinded (no individual student identification known).

For the complex restoration course 2 practicals were given:

Mid-Term Practical 20% of grade: #30 Composite Occlusal (table-top) Restoration
Final Practical 50% of grade: #3MOD Amalgam Restoration #14 Composite Occlusal (table-top) Restoration

For the esthetics course there are unannounced mini practicals during the last hour of the lab. There are five and they are graded 5,4 (Passing) , and 2,1, 0 (Failing). The students must pass all the practicals to get a passing grade in the course. They can redo them at any time during the course.

Attached you will find samples of the forms used in these courses.

IV. OTHER

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

Consortium of Operative Dentistry Educators (CODE)



REGION IV (MIDWEST) ANNUAL REPORTS

Region IV Director:
Dr. Marsha Babka
MID University
Downers Grove, IL

Region IV Annual Meeting Host:
Dr. Michele Kirkup
Indiana University School of Dentistry
Indianapolis, IN

Region IV Annual Report Editor:
Dr. Michele Kirkup
Indiana University School of Dentistry
Indianapolis, IN

CODE REGIONAL MEETING FORM

REGION: IV Great Lakes

LOCATION INFORMATION FOR 2015 REGIONAL MEETING

University: Indiana University School of Dentistry
Dates: October 8 – 9, 2015
Chairperson: Marsha Babka Phone # 630-515-7476
University: Northwestern University Fax # 630-515-7290
Address: 555 31st Street E-mail nbabja@northwestern.edu
Downers Grove, IL 60515

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

None

LOCATION INFORMATION FOR 2016 REGIONAL MEETING

University: University of Pittsburgh
Dates: TBD
Chairperson: Dr. Michele Kirkup Phone # 317-278-3398
University: Indiana University School of Dentistry Fax #
Address: 1121 W. Michigan St. E-mail mkirkup@iu.edu
Indianapolis, IN

Please return all completed enclosures to;

Dr. Edward J. DeSchepper, National Director E-mail: edeschep@uthsc.edu
UTHSC College of Dentistry Phone: 901-448-7686
875 Union Avenue Fax: 901-448-1625
Memphis, TN 38163

DEADLINE FOR RETURN: 30 Days post-meeting

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 REGIONAL ATTENDEES FORM

REGION IV Great Lakes

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2015 NATIONAL CODE AGENDA - SUMMARY RESPONSES

I. Admissions and Retention

- 1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

All schools reported that the admissions committee did an adequate to better job of screening applicants for acceptance. All schools reported that in addition to GPA and DAT, interviews were used for the selection process

- 2) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

No school reported a dexterity evaluation of candidates for admission. However, some schools reported that students were asked about jobs or hobbies that would use hand skills.

- 3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

Schools reported that there were a very small number of students accepted when they were not suited for the profession

- 4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

All schools reported that it was very difficult to dismiss a student for any reason. The most often reason for dismissal was for poor academic performance

Academic Performance?
Behavioral?
Combination of both?

- 5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

Responses varied, most schools had no refund, one school had a prorated refund, and another indicated that it was at the discretion of the Dean.

- 6) Are students' tuition insured? If so, by whom? What is the cost?

No school's tuition was insured

- 7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

Schools gave varied responses. Most schools did not facilitate transfer, while some indicated that it depended upon the reason for dismissal or if the student withdrew rather than dismissed.

II. Materials/Techniques/Curriculum

- 1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

Most schools do not teach BruxZir or Emax crown removal as a part of a formal course. It is taught on an as needed basis clinically.

- 2) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

No school reported that they teach air abrasion techniques

- 3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?

*Full cast crowns ranged from 7.5% to 30 % across the schools
PFM ranged from 50% to 80% across the schools
ACC ranged from 13% to 20 % across the schools*

- 4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

No school was considering removing amalgam from the curriculum.

- 5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

Gold is taught as a treatment option in all of the schools. If an alternate material is necessary, ceramic is the material

- 6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

Although schools responded that it is possible to graduate without experience in primary caries removal, it is highly unlikely. Schools were not concerned since there is an adequate patient base and also extramural rotations in community clinics where there are additional experiences

- 7) How does your school manage rampant caries patients? Please provide evidence where possible.

Most schools responded that they began with a caries risk assessment, followed by diet modification, oral hygiene instructions and then remineralization of lesions where possible.

- 8) What efforts do you make to give all students a uniform experience in clinic?

Schools responded that clinic managers / group practice managers reviewed the patient assignment to students and made sure that the students received the types of patient that were necessary. Some schools had requirements that had to be met

- 9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

Schools reported that the esthetic procedures included: direct resin, ceramic crowns, inlay, onlay and veneers and bleaching techniques

- 10)** Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.

Schools reported teaching resin infiltration didactically, but it is not used clinically

- 11)** What are the materials and selection criteria for complex posterior restorations?

Amalgam and composite resin are used for complex posterior restorations in addition to indirect restorations. The material is faculty driven and frequently based on the patient's desire for esthetics and economic considerations are often the deciding factor.

- 12)** How often are onlays provided as treatment vs full crowns?

Rarely are onlays provided as treatment rather than full crowns.

- 13)** Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

Materials are used for remineralization – which include various forms of fluoride, MI paste, calcium hydroxide and calcium silicate and glass ionomer

- 14)** Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

Pins are being taught for amalgam retention. Half of the schools use bonded amalgam

- 15)** Liners, Bases, and Cements. Which ones are being used for what purposes?

III. Student/Program Assessment

- 1)** Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

Most schools report that there is no reward for faculty based on clinic production.

- 2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

All schools felt that operative dentistry should maintain its own identity. This was achieved by a variety of ways: including being in a department separate from endo and perio, having a post graduate program, emphasizing caries management as part of the discipline and also the amount of curriculum time devoted to operative dentistry.

- 3) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

All schools hosted a patient based clinical licensure exam.

- 4) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

Schools are using software for student instruction and feedback at this time, but not for grading.

- 5) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a “one and done” approach? Please provide the rationale for the choices.

All schools reported using multiple performance assessments.

IV. OTHER

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

*(Please cite the evidence were applicable. **If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)***

2015 NATIONAL CODE AGENDA

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

I. Admissions and Retention

1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

Buffalo	In general yes. Providing a summary of where our graduates went this year, residencies, program, specialty, etc. would be helpful.
Detroit Mercy	We at the UDM are doing more than adequate job of screening and accepting students who will succeed in dentistry. We ask standardized interview questions on critical thinking, problem solving to all prospective candidates and recently we added a non-cognitive component to assess the candidates. The evidence of standardized questions: very low drop-outs or dismissals.
Indiana	“Adequate” is a low standard. We believe that the Admissions Committee is doing an adequate job. However, compared to previous years (>10 years) there is a noticeable lowering of the overall quality of admitted students. We have noticed that we have a yearly problem with probable failures in first year operative and second year fixed courses. The Admissions Committee in the past has contacted me to determine the number of failures in first year so they can adjust the number of admitted students into the incoming class.
Midwestern	At Midwestern, in addition to the traditional interview, mini interviews are done with multiple interviewers. This demonstrates the students problem solving skills and ability to weigh on different scenarios and problems. There is no data either way if they have success in dentistry or not
Ohio State	Yes. Our students are passing NB I and NB II with an average of 98% on their first attempt for the last 10 years. The pass rate on the licensing exam (NERB for most) is about the same for the first attempt.
Pittsburgh	The University of Pittsburgh School of Dental Medicine takes the responsibility of screening applicants very seriously. Each

	applicant, if they meet our minimum requirements, is screened independently by two faculty members. These screenings
	involve access to the individual's entire application including GPA, DAT scores, personal essay and recommendation letters. If the grades differ significantly between the two screeners, a third screener is utilized. The applicants who meet our scoring cut off are then invited for an interview. With the interviewers' comments as well as the screeners' comments, the admissions committee members individually rate the applicants. The admissions committee meets to discuss any questions regarding the applicants prior to submission of the final ratings. These ratings are then averaged to create a final ranking of the applicants.
UIC	<p>Our Admissions Committee is composed of faculty members from different departments in our college including clinicians, researchers. Pre-screening of applicants is done by the admissions faculty and staff to make sure that candidates meet the minimum requirements for GPA, required courses and necessary documentation. Candidates are invited to attend a 20 minutes interview with two faculty members using standardized questions to demonstrate their preparedness for our curriculum, exposure to diverse populations, volunteer experience, leadership, ability to collaborate with others, and understanding of ethical principals. The committee reviews the interview results along with the candidate's credentials. Our admissions committee does an excellent job of screening students that will succeed in our curriculum. The following are assessed by the committee when screening/accepting students:</p> <ul style="list-style-type: none"> • Review of the student's academic performance in upper level science courses such as biochemistry, anatomy, immunology, and microbiology; • Performance on the Dental Admissions Test; • Amount and quality of the applicant's dental assisting or shadowing experiences; • Assessing the student's commitment and exposure to community service; <input type="checkbox"/> Performance on the interview

2) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

Buffalo	Currently it isn't. We do believe there should be a standardized dexterity test.
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<p>Detroit Mercy</p>	<p>No, we at the UDM do not evaluate applicant's dexterity as part of the admissions process. Yes! In our opinion it should be evaluated. There is no standardized (common) dexterity evaluation that can be used for applicants from different educational background</p>
<p>Indiana</p>	<p>The applicant's dexterity is not directly evaluated. Candidates self-report activities that they consider demonstrate their manual abilities. A bench test of some type should be considered for applicants. The test would measure hand skills but also test the applicant's ability to understand and follow directions with a goal in mind. The DAT used to administer a chalk carving exercise. This type of hand skill test or one like it should at least be considered. IUSD is not considering an evaluation at this time.</p>
<p>Midwestern</p>	<p>We do not recommend dexterity evaluation. No data to support success. Subjective.</p>
<p>Ohio State</p>	<p>No. Not at this time. We look for evidence of hand-eye coordination building activities and hobbies in their application and look closely at their PAT score on the DAT. After giving each candidate a file score, the top candidates are invited to the school for an interview. A group of 6 people, usually 3 faculty members and 3 students, with two groups of 2 at 2 stations and 2 single interviewers at the other two stations, will interview each candidate for ten minutes for each of the four areas of questions. Each of the 6 interviewers will rate the candidate and these scores are submitted to the admissions office where a final rating is calculated</p>
<p>Pittsburgh</p>	<p>We do not at this time evaluate the dexterity of our applicants. Some individuals feel that this could be an important part of the interview process and there has been some discussion concerning this topic. If a dexterity test is incorporated, one issue which needs to be taken into consideration is the added anxiety which may be felt by the applicant. Therefore, a dexterity test given at this time may not be a true indication of an individual's hand skills. The questions we need to answer to determine if an applicant's dexterity is an important issue are: Does an applicant's dexterity level or lack thereof predict their dexterity level upon graduation? Also, to what extent can dexterity be improved with additional practice and guidance?</p>

UIC

The candidate dexterity is not evaluated during the admissions process. Some members of the committee think that manual dexterity should not be evaluated at the application stage. The College provides prospective students and interviewing candidates with a copy of the Safety and Technical Standards form, which includes information on the skillset required to complete the dental curriculum.

There has been discussion regarding implementing some form of questionnaire or clinical assessment for the Advanced Standing 2 –year International Dentist Program, but not for the regular DMD program. Our AS applicants have widely varied clinical experiences ranging from no practice experience to extensive practice experience. A “clinical assessment questionnaire” might assist in identifying students who could succeed in an accelerated track. This assessment could consist of instrument identification, recognizing flawed cavity or crown preparations and ability to follow specific instructions.

3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

Buffalo	We have encountered situations where students did not adhere to the mission and academic integrity/value system of the school, which resulted in recommendations being made by the judicial council for student dismissal. This is however a small percentage.
Detroit Mercy	Yes! At the UDM, a military student was accepted, who struggled keeping up with his grades. He was called to be dismissed from school after multiple Special Academic Performance Committee (APC) meetings and as a result it impacted his behavior. After dismissal, he was a threat for dental school. There was extra security called in the school building to keep everyone safe.
Indiana	Yes. Some students have an emotional immaturity that prevents them from handling the work load. They need hand-holding. This may be the result of the undergrad institution they attended (small college v. large university). There has been a definite deterioration in the quality of students admitted in the past 10 years. Questionable behavior is often identified very early in the first semester of first year. Students have cheated on several occasions. As far as hand skills, the vast majority have adequate hand skills by the end of the second year.
Midwestern	Yes, with behavioral issues. One student had problems with male – female interactions, lack of preparation for course work in addition to not showing up for class. Student progress recommended leave of absence – after return the student was more compliant
Ohio State	Not intentionally. We have had a few students that were not able to develop the necessary hand skills or interpersonal skills to become a dentist. Some have violated our School Code of Ethics and have been dismissed

Pittsburgh	We have unfortunately had dental students who were not able to complete the academic courses to a satisfactory level. We have had a few students who have had difficulty throughout their years as a dental student with controlling their anxiety. These students have been referred for outside counseling with a somewhat successful outcome. We have a few students, solely for their own benefit, try to find ways to manipulate the protocols and regulations we have in place. Having dealt with the students in the clinical environment I can assure you that some students do not have the patient management skills at this time to be successful dentists.
UIC	

4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

- Academic Performance?
- Behavioral?
- Combination of both?

Buffalo	At UB, most cases of student dismissal are based on poor academic performance.
Detroit Mercy	At the UDM it is very difficult Yes! Combination of both impacting academic performance
Indiana	It is relatively difficult to be dismissed. A student with poor academic performance will be allowed to retake the year which in most cases just delays the inevitable. We have had students who lacked academic performance finally leave after three years of tuition and effort and did not make it to third year. In the last five years IUSD has dismissed 3 students for behavior reasons (cheating, etc.). This does not include persons who have left due to academic/behavior problems by withdrawing before they were dismissed by the school. We believe this too high a number. I believe our latest student dismissed was for cheating in 2013.
Midwestern	No one was dismissed, permanently. Students have been put on leave of absence for both academic and behavioral reasons, mostly academic reasons

<p>Ohio State</p>	<p>Difficult. A student must be recommended by the Academic Progress Committee or the Professionalism Committee for dismissal. The student can then appeal this to the Dean of the College. If the Dean upholds the dismissal, the student can appeal again to the APC or the Professionalism Committee, depending on which committee recommended dismissal, who can consider again and overturn the dismissal. The last student was dismissed this year for the inability to pass pre-clinic competencies in Operative Dentistry. The student failed the competencies twice before remediation and several times during and after the completion of a semester of remediation. We had one student dismissed in recent history because they could not pass NB part 2. Academic Performance? – 2 in the last three years. Behavioral? – 2 in the last 7 years.</p>
<p>Pittsburgh</p>	<p>From a faculty perspective, it is too difficult to dismiss a student. The last student to be dismissed from our dental school was April 2014. The dismissal was for academic performance.</p>
<p>UIC</p>	<p>All cases of students experiencing poor academic performance or behavioral problems are reviewed by to the Sub-Committee on Student Promotions or the Student Disciplinary committee. There are detailed written guidelines that the respective committees must follow before dismissing a student.</p> <p>A student was dismissed in the Fall 2013 due to very poor academic performance.</p> <p>Most dismissals result from poor academic performance.</p>

5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

Buffalo	At UB, we facilitate tuition refund for dismissed students. Career counseling language has been added to the 2017 accreditation report.
Detroit Mercy	Yes! At the UDM we have counseling Tuition refund is at Dean's discretion.
Indiana	Not aware of any formal career counseling or tuition refund through IUSD. However, depending on circumstances, students who withdraw may be credited.
Midwestern	Refund for the year is university policy, no one has been dismissed from dental school. Not aware of counseling
Ohio State	Yes. To career counseling and no for tuition refund with the exception of refunding the last semester's tuition if they have attended few or no classes that semester.
Pittsburgh	Students are granted a tuition reduction up to the 60% mark of term completion. A withdrawal after 60% completion of the term is not eligible for a tuition reduction.
UIC	No

6) Are students' tuition insured? If so, by whom? What is the cost?

Buffalo	No
Detroit Mercy	No! At the UDM students' tuition is not
Indiana	No insurance.
Midwestern	Tuition is not insured
Ohio State	No
Pittsburgh	Students' tuition is not insured.

UIC	No, our College does not offer a tuition insurance program.
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7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

Buffalo	Depending on the situation, the administration/faculty have offered to make phone calls and/or write letters of recommendation to various programs.
Detroit Mercy	Yes! Based on good academic standing, if the student withdraws his/her seat for personal reason.
Indiana	Generally no, but IUSD in the past has facilitated the transfer of more than one of the dismissed students to another dental school. IUSD has also accepted late term students dismissed from other dental schools.
Midwestern	No student has been dismissed yet.
Ohio State	Yes. The Dean of the College, the Academic Dean, and the Director of Student Affairs work actively together with the student to find the proper fit for them and help them be accepted in their new program.
Pittsburgh	No
UIC	No

II. Materials/Techniques/Curriculum

1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

Buffalo	Yes, in an as-needed basis in the clinic. We use diamonds.
Detroit Mercy	No, At the UDM we have not established a protocol yet.

Indiana	Removal of ceramic crowns requires the use of diamond burs. We're not aware of a standard method being taught, other than to section the crown in M-D & B-L dimensions
Midwestern	There is no formal instruction within a course. Clinically metal cutting burs are used.
Ohio State	Yes using some carbide burs (SS White Great White) and diamond burs. We have also used a 2790 nm laser to remove them. We are currently testing the Waterlase MD laser to remove Zirconia crowns from vital teeth and implant abutments.
Pittsburgh	No
UIC	In pre-doctoral clinics we do not treatment plan BruxZir crowns and we do not have specific cutting instruments to remove these types of crowns. We do treatment plan e.max CAD crowns and lab fabricated e.max restorations. In our pre-doctoral program, students receive a didactic session on appropriate rotary instruments to use for cutting BruxZir.

- 2) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

Buffalo	No, very limited use in the clinic. We attach a chairside unit when we are going to repair a ceramic fracture (MCC). Faculty teaches as he-she supervises the procedure. Episodic. It is “taught” as a technique in the didactic courses D3.
Detroit Mercy	It is not incorporated in the didactic curriculum. Course director may mention it while explaining different techniques and it is not regularly used on clinic floor.
Indiana	We are not teaching air abrasion cavity preparation. We do use air abrasion for ceramic repair.
Midwestern	Not using air abrasion
Ohio State	No.
Pittsburgh	The air abrasion technique is not taught.
UIC	We do not currently teach air abrasion or use of COJET Sand in our predoctoral clinics. The techniques are discussed in pre-patient care course. The technology is not available in clinics though may be offered in the future as we expand the material options available for CAD/CAM restorations

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?

Buffalo	13.2% of crowns are all ceramic 79.4% are metal-ceramic (PFM) 7.4% are all metal
Detroit Mercy	Nexus: Feldspathic (must) and E-max Below are number of crowns from beginning of 2015 till date: Metal-based: 23 Ceramics: 29 Internal code: 3 Post & Cores: 74 Veneers: 0

Indiana	<p>From January 2015 to October 7, 2015, IUSD reports the following clinical procedure percentages.</p> <p>Metal-based (50% MCC and 30% FGC)</p> <p>Ceramics (20%)</p> <p>Post & Cores (cast post and cores: 10%; pre-fabricated post and cores: 90%)</p> <p>Veneers (32 total restorations in 2015); most often referred to grad prosthodontics or graduate operative clinics</p>
Midwestern	<p>3% Full Cast</p> <p>62% PFM</p> <p>34% ACC</p>
Ohio State	<p>Of the crowns done this year:</p> <p>26.8% are all ceramic</p> <p>51.2% are PFMs</p> <p>22% are gold</p>
Pittsburgh	<p>Non-metal ceramic crowns 20% and PFMs 80%</p>
UIC	<p>ndirect restorations completed in Predoctoral clinics form August 2014 to</p>

August 2015.

		Total count
PFM	D2750	1202
All ceramic	D2740	165
Gold (Cast high noble)	D2790	137

Onlays:

		Total count
Metalic 2 surface	D2542	0
Metalic 3 surface	D2543	1
Metalic 4+ surface	D2544	12
Porcelain 2 surface	D2642	1
Porcelain 3 surface	D2643	2
Porcelain 4+ surface	D2644	3

Veneers:

		Total count
Chairside	D2960	8
Resin lab	D2961	0
Porcelain	D2962	33

Post and core

		Total count
Cast	D2952	109
Prefab	D2954	115

This report reflects indirect restorations completed from August of 2014 to August of 2015. As we see on the first table all-ceramic crowns represent approximately 11% of the total number of crowns completed in 1 year. PFM crowns represent 80% and Gold crowns less than 10% of crowns completed in our predoctoral program

What types of cements are being used and where

- 1) Metal-based
- 2) Ceramics
- 3) Post & Cores
- 4) Veneers

Buffalo	<p>Metal-based: resin reinforced glass ionomer (fuji) or adhesive (Multilink)</p> <p>Ceramics: usually Multilink, but on occasion RMGI is used with zirconia crowns</p> <p>Post & Cores: Glass ionomer or adhesive cement</p> <p>Veneers: light cured or dual cured resin cement (variolink II)</p>
Detroit Mercy	<p>We at the UDM use Conventional FujiCem: Zirconia and E-max</p>
Indiana	<p>Nexus Resin Cement: Used for Ceramic restorations, prefabricated post/cores Used in preclinical courses and Comprehensive Care Clinics</p> <p>Fuji GI Cement: Used for FGC , MCC, and cast post/cores Used in preclinical courses and Comprehensive Care Clinics</p> <p>Zinc phosphate: Students are taught in D1 year; not used commonly in clinics</p>
Midwestern	<p>Metal-based - Rely X Cement</p> <p>Ceramics - Multi Link</p> <p>Post & Cores - Fluorocore</p> <p>Veneers -Variolink Veneer</p>
Ohio State	<p>Metal-based – Rely-X</p> <p>Ceramics – NEXUS 3 for all but Zirconia. Unicem for Zirconia.</p> <p>Post & Cores – Rely X</p> <p>Veneers – NEXUS 3</p>
Pittsburgh	<p>Metal-based: Fuji Cem</p> <p>Ceramics: Multilink</p> <p>Post & Cores: Fuji Cem</p> <p>Veneers: Multilink</p>
UIC	<p>Regarding cementation, we used RMGI for PFM and gold crowns. Fuji Cem is the RMGI used in our predoctoral clinics. Regarding cementation of all ceramic crowns, veneers and ceramics inlays and onlays we use Calibra. The dental material advisory committee is in the process of reviewing resin cements that may replace Calibra in our clinics.</p>

- 4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

Buffalo	No. Amalgam is part of our curriculum. It is taught in lab, lecture and clinic. There is no definitive evidence to suggest removing it from our curriculum.
Detroit Mercy	No! At the UDM we are not considering to remove amalgam from curriculum. It works in saliva, affordable. We do not believe that there is a consensus in the literature
Indiana	No, IUSD is not considering removing amalgam for the curriculum. Amalgam has been proven to be safe with acceptable longevity, and is an inexpensive restorative material.
Midwestern	No, we will continue to teach amalgam, it is still an accepted material, accepted for board exams, some rotation sites use amalgam
Ohio State	No. Studies support the safety and longevity of amalgams and demonstrate it to be a superior restoration in large defects especially molars. Of all the direct restorations done this year, 20.7% were amalgams and 79.3% were tooth colored. For posterior direct restorations, 34.2% were amalgam and 65.8% were tooth colored
Pittsburgh	No, we are not considering removing amalgam from the curriculum. Students learn amalgam preparations and restorations in the second semester of their first year in the preclinical environment. Studies show that amalgam is a restoration which exhibits a longer life span than composites. Composite restorations as compared to amalgam restorations exhibit a greater coefficient of thermal expansion, less wear resistance, more marginal leakage and polymerization shrinkage. We have recently implemented the Garrison system to better establish contacts for posterior composite restorations. Also, we started using Surefil SDR for placement of the initial layer in a Class II composite restoration.

UIC	No. The evidence does not support the ban of amalgam. We teach all material and technique considerations related to the use of dental amalgam in our prepatient care courses. Amalgam restorations are considered as viable options when developing treatment plans prior to patient care. We believe that there are still strong indications for the use amalgam in specific scenarios. Our statistics show that currently amalgam restorations represent less than 20% of direct posterior restorations placed in the pre-doctoral clinics. The use of amalgam has significantly decreased in the past 6 years.
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5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

Buffalo	Gold inlays and onlays are rarely done in the clinic. It has been substituted by ceramic and Zirconia.
Detroit Mercy	Ceramic Inlays, Onlays.
Indiana	In the first year curriculum, students are taught various gold restorations. The students prepare a posterior tooth for the following restorations: gold inlay, gold onlay and full coverage gold restoration. Students wax, invest and cast the gold onlay and full coverage crown for a project. During the second year curriculum, the students are expected to prepare posterior teeth for full coverage gold restorations meeting the set criteria for single restorations and FPD restorations. With a more condensed curriculum, the D2 students no longer wax, invest, or cast a full gold crown in the FPD course. With the E4D CAD/CAM system, students are taking advantage of milling acrylic blocks and casting FGC restorations
Midwestern	Preparation for full cast crowns is being taught. A non precious metal crown is evaluated from student impressions. No actual labwork outside impression making and die trimming Base metal is used

Ohio State	We are still teaching gold as an excellent restorative material. Due to esthetic considerations we are also teaching indirect processed composite restorations and zirconia restorations especially for onlays and crowns. The next academic year we are expanding the operative curriculum to 5 semesters and are adding more instruction on both metal and ceramic/indirect composite inlays/onlays to include laboratory sessions on preparing and completing these restorations.
Pittsburgh	Cast gold crowns are still a viable option for restoring a posterior tooth.
UIC	Currently indirect gold restorations are a restorative option.

- 6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

Buffalo	No. We have specific clinical requirements that will ensure exposing them to this experience
Detroit Mercy	No at the UDM it is not a concern. Students have offsite rotations where they get ample exposure to treating primary caries. To ensure they are competent we challenge their experiences to evaluate they have adequate training.
Indiana	This could be possible; however, it is not likely. In our experience when treatment planning within the Comprehensive Care Clinics, majority of patients have primary caries present. The students have various rotations which expose them to a variety of patient populations (service learning, outreach clinics, etc.). Each student is expected to achieve a specific number of direct restorations experiences by graduation. Also, an operative performance exam consist of 5 preparations/restorations: Class III anterior resin (replacing proximal contact), Class II amalgam (replacing proximal contact) and the other 3 can be any preparation or restorative material. However, all of these preps/restorations can be replacing defective restorations.
Midwestern	No, primary caries is an experience that all students have – there are sufficient numbers of patients for all students to have this experience.

<p>Ohio State</p>	<p>It may be possible but is not very common. Our students usually find a mix of primary and secondary caries in their patient population. Our students are taught in preclinic the ideal minimal preparation for primary caries in each type of restoration. They practice these preparations frequently and must pass competencies on each before going into clinic. Initially in clinic they must show their clinical instructor the ideal preparation before extending the preparation to remove more tooth structure for caries, etc.</p>
<p>Pittsburgh</p>	<p>To graduate the student needs to have a certain number of restorations completed. We do not specify if these restorations are removal of an old restoration due to secondary caries or primary caries removal. Besides grading for each restoration, the students must pass two mock board examinations and a final competency examination. We encourage the use of a tooth with a primary lesion for these examinations. Also, our students must participate for two weeks in a restorative outreach program approved by the School of Dental Medicine where they gain much valuable experience outside the dental school.</p>
<p>UIC</p>	<p>No. If there are concerns regarding student competency related to identifying and removing infected dentin /cariouss tooth structure, the student performs numerous exercises using extracted teeth. There is also a performance exam in clinic to assess student ability to identify and excavate diseased tooth structure.</p>

7) How does your school manage rampant caries patients? Please provide evidence where possible.

<p>Buffalo</p>	<p>Students are taught to manage high-risk patients before restoring teeth. They are exposed to sugar diet counseling, plaque control education, appropriate fluoride regimens and other caries-management strategies.</p> <p>Several factors go into this decision making: How rampant? The reason? Drugs, nutrition, lack of OH due to mental illness Students availabilities (Jrs Vs. Srs) The patients availability Patients finances Patient expectation of the treatment In general:</p> <ol style="list-style-type: none"> 1. prioritizing the lesions by size, depth and symptoms 2. removing most of the caries and restoring with Glass Ionomer 3. working per quadrant 4. stabilizing the situation and revisiting treatment options with patients
<p>Detroit Mercy</p>	<p>At the UDM, we have caries risk assessment form in axiUm, which needs to be filled out by every student on new patients and at annual recall. Based on the risk factors the patients are classified into high, medium and low risk.</p>
<p>Indiana</p>	<p>Caries Risk Assessment forms are to be completed on all dentate patients. Caries is managed case by case. No set protocol is in place. Students/faculty are supposed to educate patient, prescribe Prevident, and remove caries/place restorations with monitoring oral hygiene during subsequent appointments</p>
<p>Midwestern</p>	<p>Risk assessment, caries management plan using remineralization, improved oral hygiene, chemotherapeutics when indicated, re evaluation. Restoration when necessary using GI or RMGI alone or sandwich technique. Phase two treatment is not commenced until a phase 1 evaluation reveals caries is controlled</p>
<p>Ohio State</p>	<p>The students are taught the caries-control protocol found in in Chapter 2 of Sturdevant’s Art and Science of Operative Dentistry. Our temporary restorative material of choice in this situation is RMGI with a Dycal liner where indicated.</p>

<p>Pittsburgh</p>	<p>Prior to the start of any treatment, all patients are given a risk assessment form. This form categorizes a patient’s risk for caries, periodontal disease, oral cancer and oral trauma. These ratings are based upon information gathered from the medical history and clinical examination. Interventions are given to patients who are high or medium risk for any category. The patient receives a print out of this form which the student reviews with the patient. For example, some interventions may include diet recommendations, prescription fluoride toothpaste, oral hygiene instructions, topical fluoride applications and a rigid recall plan. After the treatment plan is developed, restoration of the teeth and constant reinforcement and management of the patient’s oral health occurs. When the all the treatment has been completed the patient is given a free exit exam and exit prophylaxis to ensure all restorations are fine and no new caries have developed</p>
<p>UIC</p>	<p>All treatment plans should include different phases. Disease control is called Phase 0 in which the student excavates carious tissue and places either a “transitional” GI restoration or an IRM sedative restoration when indicated.</p>

8) What efforts do you make to give all students a uniform experience in clinic?

<p>Buffalo</p>	<p>By assignment of patient families that supposedly are balanced. Rarely are they balanced so there are gross inequities.</p>
<p>Detroit Mercy</p>	<p>To give all students a uniform experience in clinic, assigning patients to the students by their needs, and challenging them after adequate experiences. Our Patient Care Coordinators work on assigning patients to the students, however patient distribution is still a problem, some students get enough patients and others don't due to drop-outs, non-compliance etc.</p>
<p>Indiana</p>	<p>Clinic Directors assign patients to D3 and D4 students and keep a record of what types of procedures the students need to fulfill a certain number of experiences prior to graduation. We have recently converted to a vertical team structure, and D2 students are required to attend clinical sessions and may have an opportunity to place direct restorations earlier in the curriculum unlike the past. The thought is to give students opportunities to experiences earlier in the curriculum therefore, allowing for more learning experiences to occur.</p>
<p>Midwestern</p>	<p>After screening where the patient needs are evaluated, the patient's chart goes to a group practice coordinator who assigns the case based upon feedback from clinic faculty as to student needs</p>
<p>Ohio State</p>	<p>The students are given a list of procedures that should be accomplished prior to graduation. This list is monitored by the student's clinic director. When new patients are assigned to each of the Comprehensive Care Clinics, the clinic director assigns patients according to the patients needed care and the students needed experiences.</p>
<p>Pittsburgh</p>	<p>Students are assigned clinic time in which they are allowed to schedule</p>

	<p>patients for oral examinations, treatment planning, restorative procedures, prophylaxis and prosthodontic treatment. Each student is given the same amount of clinic time through a rotation schedule. All students must complete a minimum number of restorations, pass two mock board restorative examinations and pass a final competency restorative clinical examination. Also, all students must fulfill a two week community service program where they provide restorative treatment in many different clinics throughout western Pennsylvania.</p>
<p>UIC</p>	<p>The managing partners along with the clinic manager meet with students individually on a regular basis to review their varied experiences in clinic. The clinic manager will assign patients to those students who do not have variety in their clinical cases.</p>

9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

<p>Buffalo</p>	<p>In the D1, there is an integrated dental practice course where they learn to make bleaching trays. In the D2, the students learn resin veneers, large Class IV, etc. In the D3, esthetic dentistry is taught as part of D3 operative dentistry didactic course. In the D4, there's an advanced adhesive dentistry elective didactic course. There is also an esthetics hands-on elective course, where advanced esthetic direct restorative procedures are performed on typodonts.</p>
<p>Detroit Mercy</p>	<p>We at the UDM teach Veneers, Ceramic crowns, Inlays Onlays, Bleaching</p>
<p>Indiana</p>	<p>In the first year curriculum, students are taught veneer preparations and all ceramic posterior restoration. The students are introduced to CAD/CAM restorations. The D1 students participate in a training session, a designing session and a glazing session. In the D2 curriculum, students are taught anterior and posterior full coverage ceramic preparations. Using the E4D system, the students attend a design session and a stain/glaze session for an anterior all ceramic crown. D1 students have a veneer preparation exercise. The preclinical D1 class is taught by Operative Department faculty. The preclinical D2 class is taught by Prosthodontics Department faculty. In the D3 year, students have an advanced restorative course taught by Operative Department faculty, which the student have 2 projects: external bleaching and resin stacking/layering. They receive lectures on veneers and ceramics. Predoctoral students may bring esthetic cases to Graduate Operative clinic & work with graduate residents & faculty</p> <p>These procedures are taught in both integrated and separate courses. Students are taught in preclinical courses and in an advanced restorative course in the D3 year.</p>

<p>Midwestern</p>	<p>Simulated case where a patient has a peg lateral and a diastema. The student treatment plans, does the diagnostic wax up, veneer preparation, veneer fabrication and cementation with shade modification. Then the student repeats the diastema closure with direct resin. Direct resin veneers ceramic onlays and bleaching are also taught in pre clinics. The esthetic procedures are taught within an integrated course.</p>
<p>Ohio State</p>	<p>Bleaching, Direct and indirect composite restorations, veneers, ACCs including zirconia, all-ceramic inlays and onlays. ACCs including zirconia crowns are taught by the fixed prosthodontic section. All others are taught by our operative section. Bleaching is taught in our early clinic curriculum. Esthetics are taught in both integrated and separate courses.</p>
<p>Pittsburgh</p>	<p>Esthetics is taught as a part of the student's composite class. This also includes pre-clinical laboratory exercises. These exercises involve Class IV built ups of typodont teeth which have been altered to represent a horizontal and an oblique fracture. Esthetics is also taught as a part of the student's Crown and Bridge class. This class also involves exercises where esthetics is of prime concern. In the student's third year, they are enrolled in a lecture course called Esthetic Restorative Dentistry.</p>
<p>UIC</p>	<p>At UIC esthetic outcomes are discussed and integrated throughout the curriculum. This begins in the D1 first semester as students learn to complete a Comprehensive Oral Examination. One full session during the first semester is devoted to completing an assessment of a patient's existing facial characteristics and smile. Esthetic considerations are stressed throughout the four-year restorative dentistry component of the curriculum. Summary – we do not have an isolated course – this topic is thoroughly integrated into all restorative components of the curriculum.</p>

10) Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.

Buffalo	Resin infiltration is taught only in lecture at this point. We would like to add a project on extracted teeth before the procedure can be introduced it to clinic.
Detroit Mercy	No we do not teach infiltration of proximal caries with resin in pre-clinics or clinics.
Indiana	Infiltration is discussed in Operative/Preventive lectures (D520 – D1; D630 – D2; D731 – D3); not available in clinic.
Midwestern	Midwestern is not currently doing infiltration clinically, didactic information is provided pre clinically
Ohio State	No
Pittsburgh	Resin infiltration is taught in the lecture portion of the student’s composite course. This class is offered to first year students during their summer semester. No resin infiltration procedures are performed in the clinics.
UIC	No, we do not teach infiltration of proximal caries in pre-clinic or clinically. We discuss this as a treatment option in didactic sessions.

11) What are the materials and selection criteria for complex posterior restorations?

Buffalo	Unfortunately, this process is still very subjective and faculty driven. The different disciplines are working on developing manuals where selection criteria for different procedures would be included.
Detroit Mercy	Materials are: Post and Core, Pin retained amalgam, Amalgambond, Luxacore Selection Criteria: Depends on affordability, time period between completion of Phase I and Phase II, Caries risk, tooth restorability and patient compliance.
Indiana	Materials available: amalgam; resin composite; gold; ceramic. In general, we follow Summitt’s textbook guidelines for cuspal coverage. Resin composite is not recommended for cuspal coverage restorations.

Midwestern	<p>Materials committee does evidence based search to determine the materials that will be used, the same materials are used in both pre clinic and clinic. There is a schedule for periodic review of materials, New materials suggested by faculty must go to the materials committee</p> <p>The materials available for complex posterior restorations include: amalgam, resin composite, ceramic only, PFM, FGC and all ceramic crowns</p>
Ohio State	<p>Metal (gold), ACCs including zirconia, amalgams, and both direct and indirect composites are the materials used in complex posterior restorations. The selection criteria is driven by the patients requirement for an esthetic restoration versus the best material for the situation.</p>
Pittsburgh	<p>The restorative material in these instances is mostly the choice of the instructor overseeing the case. The materials we have for restoration of teeth include amalgam, a nanohybrid composite (TPH 3), flowable composite, Surefil SDR which is a self-leveling flowable composite and a glass ionomer (Fuji II), For additional retention purposes we have a pin system and amalgambond. Some guidelines include Surefill SDR is only used in the proximal box below the contact point and amalgam cores are required for posterior teeth which are going to be restored with a crown..</p>
UIC	<p>For direct restorations, we have used both amalgam and less frequently composite. As for indirect, CAD CAM inlays and onlays are starting to replace large complex direct composites.</p>

12) How often are onlays provided as treatment vs full crowns?

Buffalo	Rarely. Mostly crowns are treatment planned.
Detroit Mercy	Not very often, Full crowns are the first choice.
Indiana	January 2015 to October 2015, ~1100 full coverage single crowns were completed and 6 onlays (3 gold/3ceramic) were completed.
Midwestern	1.6% of the posterior indirect restorations are onlays

Ohio State	Less than 1% of the time in total. When using CAD/CAM technology, 50% of the time.
Pittsburgh	Rarely
UIC	Very seldom.

13) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

Buffalo	We use only Rx level F1 toothpastes and MI paste, F1 vanishes, fluoride mouthrinses (OTC), Glass ionomer (GI) cements
Detroit Mercy	We at the UDM use Fluoride
Indiana	Assuming bioactive means any kind of material / agent that changes pathophysiological processes locally, we resort to fluorides in diverse presentations (prescribed based on risk levels) to manage remineralization. In theory, we have chlorhexidine in such armamentarium but it is very rarely used
Midwestern	Remineralization materials like fluoride, MI paste, etc
Ohio State	No.
Pittsburgh	Not at the present time.
UIC	The word bioactive is quite controversial. We use fluoride varnish for remineralization of enamel, and it is a bioactive material by definition. We also use Theracal for direct or indirect pulp capping in pediatric dentistry clinic and MTA in post grad Endodontics clinic. Predoctoral clinics still use Calcium hydroxide.

14) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

Buffalo	Both pins and amalgam bonding are still taught in lecture and clinic.
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Detroit Mercy	Yes! We use pins as secondary retention, and Amalgambond are still used in the clinics.
Indiana	In the first year curriculum, D1 students are taught pin, slots, and other retentive properties for a direct restoration. Minim pin system is used during the preclinical courses and within the clinics.
Midwestern	Pins and amagam bonding are taught didactically in preclinic Not used in the clinic. Only mechanical retention of locks, slots and amalgam pins are used clinically
Ohio State	Pins only.
Pittsburgh	We are using both pins and Amalgambond in our restorative clinic.
UIC	We still teach pin retained amalgams didactically and in preclinic. In few instances we place pin retained amalgam restorations in clinics. We do not support the philosophy of bonded amalgam since the evidence shows that they degrade over time.

15) Liners, Bases, and Cements. Which ones are being used for what purposes?

Buffalo	We use ultrablend and vitrebond as liners to promote secondary dentin formation, and Fuji 2 LC as a base for deep preparations to provide insulation and protection to the pulp.
Detroit Mercy	Liners: Resin Modified Glass Ionomer (Vitrebond) Cements: Zinc Oxide Eugenol as protective restoration.
Indiana	Liners: Copalite with amalgam, vitrebond with amalgam or resin Bases: Dycal for direct pulp caps. Students are taught to place vitrebond as a second layer on top of the Dycal. Cements: GI cement (Ketac and Fuji) for full casting restorations and MCC restorations; most common cement used in clinics. Resin cements (Nexus) used for all ceramic restorations and pre-fabricated post and cores. Zinc phosphate is taught in D1 year, and students' experience mixing and cementing a gold inlay project. ZP is not commonly used in clinics.

Midwestern	<p>Calcium hydroxide for direct and indirect pulp cap, covered by RMGI MTA and Theracal (Tricalcium Silicate) taught didactically RMGI used for sandwich technique</p>
Ohio State	<p>The most common liners are Copalite, gluma, GI materials and Calcium Hydroxide materials. The most common base is RMGI. We do have IRM but is is used infrequently.</p>
Pittsburgh	<p>Cements: TempBond: temporary cement Fuji II RMGI Cement Durelon (Carboxylate Cement) CX- Plus Glass Ionomer Cement Calibra Resin Cement Multilink Automix (Resin Cement): ceramic crowns</p>
	<p>Liners: Vitrobond Glass Ionomer Liner/ Base Fuji Lining LC (Glass Ionomer) Dycal MTA: Used only for direct pulp capping</p>
UIC	<p>Liners: Calcium hydroxide for direct or indirect pulp capping under direct amalgam or composite restorations. RMGI as a mechanical barrier in direct restorations under amalgam or composite Bases: RMGI to block undercuts under indirect restorations such as inlays or onlays Cements; RMGI for final cementation for PFM and gold crowns. Resin cements for all ceramic crowns, inlays, onlays, and veneers. Sealer and desensitizing agent: GLUMA</p>

III. Student/Program Assessment

- 1) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

<p>Buffalo</p>	<p>Yes they are in the D3 year Discipline Clinical Courses. No it is not always valid as it does not take into account the difficulty of patients procedures, scheduling problems, basically patient family issues.</p>
<p>Detroit Mercy</p>	<p>No at the UDM we do not have a reward faculty or student based on clinic production. Yes! It is a</p>
<p>Indiana</p>	<p>IUSD: Neither faculty or students are rewarded at IUSD. Students have a grade that is given to them each semester based on clinical points achieved in each discipline, which correlates with the idea of production. Rewarding by monetary means is an interesting concept raised. However, we've also discussed going to a case completion type of curriculum. This may be the best solution for us in an attempt to achieve "patient centered care" vs. students being focused on the points and not the patient.</p> <p>In general, our assessment program for clinic has moved away from a graded structure and to a formative feedback system. We want the students to focus less on the grade and more on the constructive feedback they receive in order to improve performance</p>
<p>Midwestern</p>	<p>Yes for faculty, but it is based on professionalism and collegiality, not production. Not a good idea to base incentives on production – it may influence the program and teaching goals</p>
<p>Ohio State</p>	<p>No. It could be a valid method of assessment but is open for a wide array of abusive practices which often are not in the patient's best interest. It would also need to be adjusted for faculty members who do not do complex cases with the students versus those who do because of the cost of these different procedures.</p>

Pittsburgh	Neither, faculty members or students are rewarded based upon clinical production. I believe for faculty members this would not be a valid assessment due to many factors present for which the faculty member has no control. For students, rewards for production may increase the student's desire to be more efficient and be more willing to fill any canceled appointments. Also, this would give the students more of a real world experience.
UIC	Faculty are not evaluated or rewarded for clinical production. Students are
	evaluated on varied experiences by looking at number of procedures completed through their clinic production. Also faculty observation and selfassessment is part of the clinic evaluation. Recently students started earning Relative Value Units (RVUs) for procedures completed. Each student will earn an average of 5 points per visit.

- 2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

<p>Buffalo</p>	<p>All we can do is continue to emphasize the importance of our discipline. Operative dentistry is the basis of other, more advanced, restorative procedures. Retain inlays and onlays-type restorations, as part of the Operative discipline, may be essential for the psychomotor skill development.</p>
<p>Detroit Mercy</p>	<p>Yes! We think that Operative Dentistry should retain its own identity. Why? Because we incorporate a huge portion of operative procedures in the didactic and clinic curriculum. What should be included in its identity? Teaching and updating caries risk protocol as per evidence based dentistry, Operative dentistry should use maximum tooth prevention strategies including remineralization, incorporating fluoride into public water supplies, minimal invasive cavity design, and use of bioactive materials. In short, Operative dentistry should be ready to move on into 21st century.</p>
<p>Indiana</p>	<p>Our school recently changed our departmental structures. Previously, the operative dentistry courses and faculty were part of the Department of Restorative Dentistry (Operative, Dental Materials, Prosthodontics and Comprehensive Care). Now, they are within the Cariology, Operative Dentistry and Public Health Department. It was important to have “Operative Dentistry” within the departmental name which will help maintain an identity. Also, we offer a Graduate Operative Dentistry Program.</p>
<p>Midwestern</p>	<p>Operative dentistry is its own identity, perhaps more now more than ever with emphasis on esthetic and minimal restorative procedures. At Midwestern there are no departments so there isn't much separate identity for any discipline. Operative dentistry should incorporate preventive measures and minimal intervention like resin infiltration, into it's identity along with the more traditional restorative procedures, esthetic procedures, single indirect restorations.</p>

Ohio State	It should retain its own identity.
Pittsburgh	One way to ensure it maintains its own identity is creating or maintaining
	<p>courses in the curriculum that only pertain to operative dentistry. At Pitt, we have a 5 course series starting in their 3rd year that only pertain to clinical operative dentistry. Also, for year 1 and 2, our pre-clinical courses of Dental Anatomy and Lab, Amalgam course and Lab, and Composite course and Lab lay the foundation for clinic. All these courses are under the Department of Restorative Dentistry and Comprehensive Care. The fact that we have our own Department that is separate from the other disciplines like Endo and Prostho further enforces our own identity. Our Curriculum Committee at Pitt agrees that we should have our own identity. We have identifiable competencies that are supported by the Curriculum Committee that pertain to operative dentistry. Our mission statement is: Restore defective teeth to proper form, function and esthetics using appropriate materials and techniques.</p>
UIC	<p>There has not been a separate Operative Dentistry component or a Department at UIC for more than twenty years. Our Department is a Restorative Dentistry department and our courses are not discipline centered but rather are multidisciplinary. So we do not see any difficulty with not maintaining an “operative dentistry identity”. Traditionally operative dentistry has been the segment of the curriculum that relates to restoration of individual teeth. This is still obviously an important component of our teaching but we rarely refer to this as operative dentistry. We stress a comprehensive, multidisciplinary approach to patient care that includes extensive restorative dentistry understanding and skill development for procedures that were traditionally included within operative dentistry. Sturdevant’s text is required reading.</p>

3) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

Buffalo	Yes, US still hosts a traditional board exam. NY State, however, does not require a traditional board exam to practice but rather a 1 yr dental residency program. To our knowledge, no other alternatives are considered.
Detroit Mercy	Yes! We still host traditional clinical board exam. We are not considering to move away from it. We follow a modified Buffalo model.
Indiana	It currently still utilizes a traditional board exam (NERBS). The idea of moving away from the patient based exam has been discussed for some time. At this time, it has been discussed with the Indiana Dental Association. A bill has been developed between the school and IDA that is for the purpose of examining alternatives such as OSCE's and e-portfolios. The bill has been tabled at this time but will eventually be presented to the Indiana Dental Board for review. Most people at this time feel as though we need to do better of not having a high stakes exam that only gives one snapshot in time of students development.
Midwestern	Yes, we host CRDTS
Ohio State	We host the NERB exam. We have had discussions within the school about moving away from the patient based model but have not arrived at a consensus on how.
Pittsburgh	At this time no alternatives to patient based clinical boards are being considered. We are still participating with the Commission on Dental Competency Assessments (CDCA).
UIC	Our school host CDCA (NERB) in a CIF format which consist of prosthodontics and endodontics typodont exam and a restorative an periodontics patient exam.

- 4) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

<p>Buffalo</p>	<p>At UB, we are in the process of introducing E4D in the fixed course for student feedback purposes and comparisons against master preps only. Because this is however, still in the very early stages of development, the software needs further development before it can be reliably used for student project evaluation.</p>
<p>Detroit Mercy</p>	<p>We use Sirona’s Prep Check. We have been implementing it for a year. Students use it for self-evaluation and so far their feedback is positive on the Prep Check software. At this point we are not using it for final grading, because it requires several adjustments in the software setting to match it to our grading system</p>
<p>Indiana</p>	<p>We do not use digital imaging for student grading. We felt that it is too cumbersome at this time for us given the number of students we have per class, as well as our limited resources of units for scanning/designing. If we had more units and the newer lasers for scanning, it could go quicker and we could reconsider. It was interesting to hear an ADEA presentation at the Boston 2015 meeting from an Iowa school that has integrated this software into their tooth morphology course. The person presenting said that evaluations were not favorable using this method. Students surprisingly seemed to prefer the subjectivity of faculty graders to the program evaluation. We do, however, regularly use E4D in both the preclinical and clinical curriculum. It is taught in the 1st year with training/designing of a posterior restoration and again in the 2nd year with training/designing of an anterior restoration.</p>
<p>Midwestern</p>	<p>We are not using software for student assessment yet. We have begun using software for faculty calibration.</p>
<p>Ohio State</p>	<p>We are not using it now but have looked at both systems and will be implementing its use in the future.</p>
<p>Pittsburgh</p>	
<p>UIC</p>	<p>UIC COD uses Planmeca technology. The Romexis Compare software is introduced in the D1 Fall semester during the Dental Anatomy course. Students compare their Wax-Ups to a “Master” specimen which has been previously uploaded on all computers. This way students start to become familiar with the digital technology by learning the concept of scanning and comparing. Selfevaluation and faculty evaluation is required prior to scanning a tooth wax-up.</p>

	<p>The next student project regarding digital dentistry is during their Fixed Prosthodontic pre-patient care course in which students scan and Compare one posterior and one anterior crown preparation with a specific set tolerance for the course.</p>
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5) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a “one and done” approach? Please provide rationale for the choices.

<p>Buffalo</p>	<p>The operative competencies are undergoing change. We traditionally had a direct CBR CPE and an Amalgam CPE; we are adding a bonding procedure CPE (etch, prime, bonding resin) so that we can watch and assess the entire procedure. We currently had 2 examiners for each CPE: A primary examiner (a small number of identified faculty who are assigned by staff to the student) and a secondary examiner who is selected by the primary examiner)</p>
<p>Detroit Mercy</p>	<p>We “Restorative Department” have several competencies to assess Operative Skills: Pre-Clinical competencies: Rubber Dam Isolation, Class I,II,III,IV preparation and Restoration. Clinical Competencies: Rubber Dam Isolation, Caries removal, Class II and III Preparation and Restoration Bench instructors are responsible to grade pre-clinical competencies. In clinics, for each competency, two faculty approve the competency from start to finish If the student fails the competency then, they remediate it until they Pass.</p>

<p>Indiana</p>	<p>Preclinical—Every major preclinical laboratory course has multiple practicals within the course. They are graded by full time faculty mainly, even though we do hire 4th year dental students as bench instructors. We feel that multiple assessments are best from a grade consideration. Our lab courses are now separate from the lecture courses. Our lab components are mainly comprised of grades from practical examinations. They must pass the lab course before being promoted to the next year. Therefore, they are a critical component of our preclinical curriculum.</p> <p>Clinical—Each discipline requires passing one or more competencies prior to graduation. The operative discipline requires 5 competencies. We think this is an appropriate number in order to test them on various prep classifications and materials. However, only one competency is required in most prosthodontic areas (dentures, fixed, implant,etc). This is primarily due to a limitation in resources; namely patients. That is why a “one and done” approach is taken in some disciplines. Our school has discussed the idea of clinical restructuring with the likelihood of having discipline based clinics for the 3rd year and comprehensive care clinics in the 4th year. The division separating these two clinical arrangements may hinge on students passing certain competencies so that they can then be placed into the comp care for more efficient and independent patient treatment.</p>
<p>Midwestern</p>	<p>We have numerous ICPAs (Independent Competency Performance Assessments) at the preclinical and clinical levels. The evaluation methods vary.</p> <p>In the pre-clinic teaching faculty may be the graders, the content expert(s) may</p>

	<p>elect to do all the grading, or a small group of evaluators picked by the content expert may be asked to participate in the evaluation.</p> <p>For clinic based ICPAs there is individual faculty evaluations and often the two suite clinical faculty where the student is taking the ICPA. Manikin or patient based exams are evaluated by teams of 3 – 6 faculty. Mock boards are evaluated by 3 faculty “examiners”</p> <p>Preclinical performance exams include: Class II amalgam preparation and restoration Class II composite restoration Full gold crown prep and provisional 3 Unit fixed bridge preparation and provisional RPD design</p> <p>Clinical performance exams include: Patient assessment Treatment planning Caries Management Pulpal Diagnosis Direct Restoration Scaling and Root Planing Endodontic treatment Exodontia Indirect restoration (preparation and restoration) Periodontal Maintenance Mock Boards</p>
<p>Ohio State</p>	<p>We are not using it now but have looked at both systems and will be implementing its use in the future.</p> <p>DDS Clinical Competencies</p> <p>Head & Neck Exam Radiology Assessment & Treatment Planning</p> <p>Periodontology - Assessment Periodontology Treatment</p> <p>Endodontics Evaluation of Patient Endodontics - Treatment Posterior Endodontics Treatment Anterior</p> <p>Hard Tissue Surgery Local Anesthesia Nitrous Prescription Writing Medical Assessment of Patient</p>

	<p>Medical Emergencies</p> <p>Orthodontic Screening</p> <p>Pediatric Dentistry Treatment Planning</p> <p>Pediatric Dentistry Sealants</p> <p>Pediatric Dentistry Restorations</p> <p>Special Needs Patients & Informed Consent</p> <p>Critical Thinking - Dent 3 Case Presentation</p> <p>Outcomes of Treatment</p> <p>Amalgam Restoration - Dent 3</p> <p>Composite Direct Restoration - Dent 3</p> <p>Direct Restorations Regional Board - Dent 4</p> <p>Indirect Restorations</p> <p>They are administered by the clinical faculty and graded by the attending faculty except for the Direct Restorations Regional Board - Dent 4 which are graded by remote faculty to prepare the students for the live patient portion of the NERB exam. Some are one and done and some are not. The students must pass each of these competencies even if it takes multiple times. The rationale is that when they graduate we are certifying by that diploma that they are competent to do those procedures taught in our program.</p>
<p>Pittsburgh</p>	<p>Students are given a daily grade for any restorative procedure performed. These daily grades are given by the restorative dentist assigned to the module. Additional assessments in clinical restorative dentistry are given as a mock board restorative clinical examination. These clinical examinations are given in the spring term of the third year and again in the fall term of the fourth year. These mock board assessments are graded by some full time faculty, part time restorative faculty and some faculty members who are CDCA examiners. After successful completion of all the required restorative procedures, a final competency is given and graded by a team leader. This final competency is the last hurdle which must be passed to sign out of the restorative department.</p>

UIC	<p>Student performance exams are one of our core assessment tools.</p> <p>Performance exams are scheduled during each semester of the curriculum. They are scored by quality of outcome and accuracy of the student's selfassessment. The first restorative dentistry performance exam of the D1 year is weighted 100% for accuracy of self-assessment. The self-assessment percentage decreases and the quality of outcome portion increases as the students progress in the curriculum. Performance exams are given for essential restorative skills and procedures. Performance exams are graded by the restorative faculty. For most exams the criteria for the procedure are divided between available faculty. Each grader assesses one or more criteria for all students rather than having each grader assess all criteria for a smaller number of students.</p>
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IV. OTHER

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

Consortium of Operative Dentistry Educators (CODE)



REGION V (NORTHEAST) ANNUAL REPORTS

Region V Director:
Dr. Richard Lichtenthal
Columbia University
New York, NY

Region V Annual Meeting Host:
Dr. Richard Lichtenthal
Columbia University
New York, NY

Region V Annual Report Editor:
Dr. Richard Lichtenthal
Columbia University
New York, NY

CODE REGIONAL MEETING FORM

REGION: V

LOCATION INFORMATION FOR 2014 REGIONAL MEETING

University: COLUMBIA UNIVERSITY COLLEGE OF DENTAL MEDICINE

Dates: OCTOBER 2, 2015

Chairperson: DR, R. LICHTENTHAL

Phone # 212 305 9898

University: COLUMBIA

Fax # 212 305 8493

Address: 630 WEST 168 STREET NYC NY
10032

E-mail rml1@cumc.columbia.edu

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

Are schools teaching the use of hand instruments in operative dentistry, which ones and for what. ?

Faculty to student ratios in pre-clinical and clinical operative (or general) dentistry.

Are students evaluated daily (graded) in clinical procedures?

Does your school offer a MS in Operative Dentistry?

LOCATION INFORMATION FOR 2015 REGIONAL MEETING

University: NYU

Dates: October 6-7, 2016

Chairperson: Dr. James Kaim

Phone # 212-998-9720

University: NYU

Fax #

Address: NEW YORK CITY, NEW YORK

E-mail Jmk2@nyu.edu

Please return all completed enclosures to;

Dr. Edward J. DeSchepper, National Director

E-mail: edeschep@uthsc.edu

UTHSC College of Dentistry
 875 Union Avenue
 Memphis, TN 38163

Phone: 901-448-7686
 Fax: 901-448-1625

DEADLINE FOR RETURN: 30 Days post-meeting

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 REGIONAL ATTENDEES FORM

REGION: V

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2015 NATIONAL CODE AGENDA

REGION V RESPONSES

(Evidence cited where applicable)

Region V School Abbreviations

BU Boston University

CLMB Columbia University

CONN University of Connecticut

DAL Dalhousie University

HARV Harvard University

HOW Howard University

LAV University of Laval

MCG McGill University

NYU New York University

PENN University of Pennsylvania

SUNY State University of NY – Stony Brook

TEMP Temple University

TUFT Tufts University

UMD University of Maryland

UMNJ University of New Jersey

UMON University of Montreal

USN US Naval Dental School

UTOR University of Toronto

2015 NATIONAL CODE AGENDA

(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as PDF files for utilization in the Annual Fall Regional Report)

2015 REGIONAL CODE AGENDA

Thursday, October 2nd, 2014

Columbia University
Columbia Presbyterian Hospital

PH 17 Conference Room

I. Admissions and Retention

- 1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

Concensus : Yes

UPenn : Yes

Columbia : Ye3)

Tufts : Yes

NYU : Yes

UConn : Yes

Temple : Yes our admissions committee conducts a full file review of an application. Technical standards such as cognitive abilities, manual dexterity skills, sensory/observatory ability, communication and behavior are thoroughly evaluated. Evidence for success obtained from board scores and passing rates on licensing examinations.

StonyBrook : Yes

Rutgers: Yes

- 2) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

Concensus: No

UPenn : Not really. Evidence does not point to dexterity performance predicting better performance in dental school. Even poorly performing students pre-clinically have been shown to catch up during clinical years.

Columbia: No

Tufts: No, but we do look at the perception portion of the DAT.

NYU : No. The number of students who are incapable of learning dental skills is extremely small

UConn: No

Temple: uses a peg board exercise. The peg board was introduced last year to formalize the admission of applicants manual; dexterity. We also evaluate the PAT section of the DAT exam.

StonyBrook: NA

Rutgers: No we do not and believe that dexterity tests have no correlation to clinical skills.

- 3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

Concensus: Does not happen frequently

UPenn : Not really, but it may rarely happen.

Columbia: Occasionally, for all of the reasons listed. The system is very good but not perfect.

Tufts: Occasionally, admission will not release the reasons. Some students will leave on their own, either feel they are not suited or did not realize what the curriculum would entail.

NYU: We expect every applicant accepted to have the skills necessary to graduate. They may require additional help . On occasion we accept a student that cannot meet our standard, but there is no consistent metric.

UConn: Does not happen frequently

Temple : HIPPA regulations prohibit specific examples however circumstances can change over the four ears in dental school and because the admissions process is not perfect it is possible to accept students who turn out to be not well suited to become a dentist.

StonyBrook: NA

Rutgers: Yes. There are always a few in each class who do not make it – for a variety of reasons. Usually they are dismissed or drop out.

- 4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals?

Concensus – Dismissal is difficult for academics, very difficult for behavioral – All schools struggle with the problem.

UPenn: The student has to demonstrate poor academic performance or very poor behavioral issues in order to be dismissed .

Columbia: Academic failure not difficult. Ethical problems are difficult.

Tufts: Both academic and behavioral reasons

NYU: There is a written process and multiple committees and appeals are available.

Temple : Academic performance criteria are strict and well documented allowing for easier dismissal Behavioral/ethical problems present challenges for outright dismissal and usually result in other disciplinary recommendations.

StonyBrook : NA

Rutgers: Very difficult. A student was dismissed last year.

Academic Performance?

UPenn: Two failed classes puts the student in front of the Committee of Student Advancement and it is reviewed and voted upon. This and medical leave of absence are the majority of the reasons for leaving.

Columbia: Course grades and clinical progress are documented monthly by the class academic and clinical progress committees. Strict guidelines for course failure are followed. Students repeat the year or dismissal is recommended.

Tufts: Both academic and behavioral

NYU : Yes

UConn: Difficult but possible for Academics. Ethics/behavior is more difficult.

Temple: Academic performance criteria are strict and well documented allowing for easier dismissal. Last one was August 2015. Behavioral/ethical problems present challenges for outright dismissal and usually result in other disciplinary recommendations.

StonyBrook : NA

Rutgers: A student was dismissed last year for academic reasons.

Behavioral?

UPenn: No students, to my knowledge have been dismissed based upon behavioral issues. Upon incidence report submissions following behavioral infractions, the student is subject to meeting with the Ethical Board or the Student Advancement Committee depending on the severity of the incident. Not really prevalent ; cannot recall the last behavioral dismissal.

Columbia: Behavioral or ethical problems require a much more complicated process and only occasionally ends in dismissal if the offense is egregious (blatant cheating, etc.)

Temple: Behavioral/ethical problems present challenges for outright dismissal and usually result in other disciplinary recommendations.

Tufts: Occasionally

NYU : Yes

UConn – Yes but rarely

Temple: Occasionally

StonyBrook: NA

Rutgers: Dismissal for behavior s very difficult because of legal challenges.

Combination of both?

UPenn : See above. Dismissal is difficult for anything other than academic reasons. It is something that all schools are struggling with.

Columbia: A student who fail academically and has an ethical/behavioral violation is easy to dismiss – but rarely are things that easy.

Tufts: Yes

NYU: Yes

UConn : NA

Temple: Behavioral/ethical problems present challenges for outright dismissal and usually result in other disciplinary recommendations.

StonyBrook: NA

Rutgers: NA

5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

Concensus: limited or none

UPenn: No organized career counseling for dismissed students. WE have a refund policy for the first month of each semester.

Columbia: No career counseling but transfer assist; some tuition rebate.

Tufts: Students rarely are dismissed. Student affairs office does counseling, Some students take a hiatus and then re-apply to the school. Some portion of the tuition is refunded.

NYU: No

UConn: No career counseling. No refund.

Temple: Counseling is available for all students while they are actively enrolled. No tuition refund after a certain date early in each semester. No tuition refund for dismissed students since dismissal usually occurs after the deadline for tuition refunds.

StonyBrook: NA

Rutgers: Career counseling –No, Psychological counseling is available, Tuition is partially refunded within the first six weeks of a trimester.

6) Are students' tuition insured? If so, by whom? What is the cost?

Concensus: No

UPenn: Students can explore options on their own, but no official program exists.

Columbia: Not by the University

Tufts: unsure

NYU: No

UConn: No

Temple: No

StonyBrook : NA
Rutgers: No

- 7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

Concensus: No
UPenn: No
Columbia: Administrative assists do occur.
Tufts: Yes
NYU: we will do anything that is appropriate.
UConn: No
Temple: Not known. Letters and transcripts are available on request
StonyBrook: NA
Rutgers: Only if asked for letters of recommendation

II. Materials/Techniques/Curriculum

- 1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

Concensus : Mostly yes

UPenn : Yes, if it needs to be replaced. We section the tooth using specially ordered burs for zirconia and lithium disilicate.

Columbia: Yes, its the only way to get them off. Diamond burs (single use) with supplemented water spray.

Tufts: Yes. Uses the same burs for all – diamond burs.

NYU: Do not teach in Operative

UConn: Yes if it needs to be replaced. Diamond burs.

Temple: Crown removal is taught in the pre-clinic and lab courses. The techniques similar for all crowns and students are told it is best to use the specialty bur kit from Brasseler.

StonyBrook: Yes we use diamond burs with copious water. We supply single use burs to defray the cost since the burs are usually destroyed.

Rutgers: No

- 2) Does your school teach air abrasion/co-jet techniques? If so where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

Concensus: Some lecture, Clinical mainly No

UPenn: Not really taught as a restorative procedure. It is taught as a diagnostic step for occlusal lesion detection vs. stain. It is covered in the D3 operative dentistry lecture course.

Columbia: Lecture only . Not used clinically

Tufts: No

NYU : Do not teach

UConn: Not in restorative

Temple: Lecture only in the junior year and not used in the clinic.

StonyBrook: Yes we teach air abrasion / co-jet techniques for metals in clinic. The use of amalgam for core buildup has decreased in the past few years. Less than 5% of buildups are in amalgam.

Rutgers: No

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics?

What types of cements are being used and where

- 1) Metal-based
- 2) Ceramics
- 3) Post & Cores
- 4) Veneers

Consensus: Non-metal crowns are increasing

UPenn: Non-metal crowns are increasing ; as long as the conditions are correct and there are no contra-indications. PFM crowns are still the most prevalent. Currently : PFM – 67.9 %, All ceramic – 20.65%, Full Cast Gold 11.5%.

Cements:

1. Metal based. All kinds. RMGI, Max Cem Elite, zinc phosphate
2. All ceramic bases: Panavia 21, Panavia F, Nexus, RelyX
3. Post and Cores: a. Traditional posts: MaxCem Elite, Zinc Phosphate, Resin or PMGI.
b. Fiber posts: Max Cem Elite, Panavia 21
4. Veneers: Nexus, Clearfil Esthetic Cement Kit.....

Columbia: PFM 75%, Ceramic 20 %, Cast Gold 5%

1. Metal based: RMGI
2. Ceramic: Nexus, RelyX
3. Post and Core : Resin Cement
4. Veneers : Resin Cement

Tufts: 15% non-metal to 85% PFM. Cements: Resin or RBGI used most frequently. RelyX unicem is used for metal based , ceramics and post and cores. RelyX plus is the RMGI of choice. For veneers we use Variolink

NYU; Taught in Prosthetics

UConn: No exact data , moving toward ceramic

Temple: Less than 15% of crowns are ceramic vs. PFM crowns. Cements:

1. Metal based : RMGI
2. Ceramic : RMGI, Calcium aluminate
3. Post/Core : RMGI
4. Veneers: Ultrabond (DenMat) Variolink (Ivoclar)

StonyBrook: The majority of crowns done in the clinic are PFM however more crowns in the esthetic zone are being done in non-metal ceramic.

1. Metal Based: RMGI
2. Ceramics: Resin or RMGI
3. Post and Core : Resin
4. Veneers Resin cement

Rutgers: Non-metal : 25%, PFM :75%

1. Metal based : ZnPhos, Compomer
2. Ceramics: Compomer
3. Post and Core: ZnPhos, Compomer
4. Veneers: Resin based

4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

Consensus: NYU :large reduction in amalgam 95% composite to 5% amalgam. All others have not removed amalgam from the curriculum.

UPenn: No, not at this time. There is not evidence to do so, based on patient safety.

Columbia: No. Economics and longevity for large intra-coronal restorations. Used where isolation is impossible.

Tufts: No we are not considering removal of amalgam from the curriculum. There are situations that warrant each, amalgam or composite, and patients are offered both.

NYU: Amalgam still has limited use, such as inability to adequately isolate the area of restoration, inability to pay for more substantial restorations

UConn: Removal of amalgam is not being considered at this time. Composite procedures are increasing however.

Temple: No. While the use of amalgam for small to medium sized lesions may be decreasing there is still a need for training in the repair and replacement of currently existing medium to large amalgam restorations

Where indirect techniques are not financially possible there continues to be a need for durable long term direct restoration with amalgam. Scanning and milling technology may change the equation in the future if costs decrease.

StonyBrook: Not yet, but we have been reducing the teaching of amalgam and increased composite and other esthetic adhesive materials.

Rutgers: No. It is still superior to composites as a direct restorative material in high stress areas on posterior teeth. It is the only direct alternative when isolation is not possible.

- 5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

Consensus : Large reduction in gold procedures. Still teaching pre-clinically but clinical substitution increasingly with ceramics

UPenn: Gold is still being taught in our school and being done. We have designated faculty that are training in the Tucker technique and students work with them. The procedure is covered in depth during the D3 Operative Dentistry lecture course where one of these faculty is a guest lecturer.

Substitutions would be: Porcelain onlay/inlay, PFM crown, all metal(non-high noble), zirconia, and all ceramic materials.

Columbia: Yes, gold restorations (onlay) are taught in the pre-clinic and used sparingly in the clinic.

Rapidly being replaced by digital video capture/computer designed / and milled esthetic ceramic restorations

Tufts: gold is not used often as a restorative material but it is presented in the curriculum.

NYU: Gold is taught in the D2 esthetics course but clinically lab processed esthetic restorations are preferred.

UConn: Taught pre-clinically but diminishing clinically – substituted by ceramics.

Temple: Cast post and core and single unit crowns are still in the curriculum. Ceramic inlay and onlay restorations are replacing gold as milling technology is now available at the school.

StonyBrook: As gold is still a part of the national boards we continue to teach gold inlays, onlays and crowns in Yr. 2. Clinically, gold restorations have decreased in the past few years and are used primarily on second molars. Ceramic or PFM has been used to replace gold restorations.

Rutgers: Preparation and temporization for gold inlays, onlays and crowns are taught.

Unfortunately

the future looks bleak for gold. There is no substitute for gold.

- 6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

Consensus: Not a problem.

UPenn: We do not believe that this is a possibility. We have clinic coordinators that make sure students have the appropriate experiences.

Columbia: No. Assignment of comprehensive care cases is based partially on the students' broadly based experience. Caries removal is a criteria for all restorative procedures and examinations.

Tufts: It is not likely that a student will graduate not having removed primary caries. A new caries removal course at the end of year 1 using extracted teeth adds to that experience.

NYU: No. Two independent faculty assessments of caries removal are required.

UConn: No. All students have an experience.

Temple: No, All students experience primary caries removal. Student experiences are tracked and patients can be assigned based on need.

StonyBrook: No: Students begin comprehensive care in Yr. 2 and have ample time to diagnose and treat primary caries. Several competencies in caries removal must be passed in years 2,3 and 4.

Rutgers: It is possible but not probable. We ensure adequate training in a caries removal training session and a caries removal competency exam in year 3. Caries removal is also a criteria for all operative exams.

7) How does your school manage rampant caries patients? Please provide evidence where possible.

Consensus: High risk CAMBRA protocols, mass excavation, provisionalization IRM or GI

UPenn: We provide high risk CAMBRA protocol counselling and prescribe products. We do not have supplies to dispense to patients. We do complete caries control, possible provisional restorations (IRM) the after risk is changed, restorations will be addressed.

Columbia: High risk Cambra approach, mass excavation, temporization, patient education, permanent restoration.

Tufts: Patients with rampant caries are given CAMBRA counseling followed by quadrant caries control to see if the teeth are restorable.

NYU: There is no specific protocol although students treatment plan those teeth at most risk first which could be 2 or 3 teeth at the same visit.

UConn: CAMBRA protocols – Mass excavation, IRM or other provisional restorations before permanent.

Temple: Caries control; techniques/ stepwise excavation

StonyBrook: for rampant caries our cambra protocol : bitewing radiographs q/six months, recall every 3 months, saliva flow tests, xylitol antimicrobial treatment, home care fluoride, tretmen, calcium opical supplements, argenine bicarb and calcium carb soft chews.

Rutgers: Caries risk assessments are performed on all patients treated in restorative dentistry. Causes are determined and therapies imposed – fluoride trays, fluoride toothpaste, rinses, peridex, etc. Excavation, sedation with GI and definitive treatment after rampant caries is controlled.

8) What efforts do you make to give all students a uniform experience in clinic?

Consensus: Coordinators etc.to assign patients based on need serve to provide uniform experience.

UPenn : Group system with clinic coordinators to manage and monitor students progress. They steer appropriate patients to students based on their experiential needs.

Columbia: Regular review of student portfolio of patient rosters/treatment plans/ progress by group leaders and assignment according to need for broad based experience.

Tufts: Faculty are rotated so that students work with as many as possible. Patient coordinators insure that students get patient pool that provides a well-rounded experience. Rotations within the school and the five week externship enhances the variation.

NYU: Our practice directors insure that a minimum experience is obtained among procedures and disciplines , but our philosophy is comprehensive treatment of patients.

UConn: Coordinators , screening faculty assign necessary cases to students

Temple: Temple has the cluster model with patient centered comprehensive care as the goal. Students must meet minimum requirements / experiences. Students are tracked by cluster leaders and clinic coordinators and patients can be assigned based on need.

StonyBrook: Each student must meet MCA outlined in D2,3, 4. Strong mentor programs. Clinic coordinator to monitor patient roster, student progress. Achievement sheets updated regularly. Assignment based on need.

Rutgers: Group practice administrators are responsible for uniform distribution of patients and patient needs to all 80 students (40 third year and 40 fourth year) in their group.

- 9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

Consensus: Most all esthetic procedures are taught in pre-clinical lab by Restorative/Operative. Some separate, some integrated.

UPenn: Porcelain inlay and onlay procedures are taught/integrated into the D1 Operative course. Porcelain veneers and all ceramic crowns are taught in/integrated in the D2 fixed prosthodontics course. The department of Preventive and Restorative Sciences teaches these courses. We do not have separate departments.

Columbia: Ceramic inlays, onlays, crowns and veneers are taught by the Division of Operative Dentistry and are all integrated into the pre-clinical comprehensive care format.

Tufts: Esthetics is taught in several areas.

NYU: All procedures including porcelain veneers, onlays, cad-cam, and a separate esthetics course within our department.

UConn: Esthetics is taught in D2 and D4 courses

Temple: Composite restorations, direct composite veneers, diastema closure : Restorative II (Freshman)
Ceramic Crowns, inlays, Onlays and ceramic veneers: Restorative III (Sophomore)
Senior implant course has a small lab component

StonyBrook: Esthetic procedures are taught in different courses as part of general dentistry. , Prosthodontics and Digital Technology. Operative – anterior and posterior composite, esthetic indirect

Inlays and onlays. Fixed Pros- esthetic crowns. Esthetic course – Veneers.

Rutgers: The restorative department teaches the esthetic restorative procedures - all ceramic crowns, inlays and onlays, veneers and the use of direct composite in all areas.

10) Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.

Consensus: Discussed in lecture at some schools, not used clinically

UPenn: This treatment option is covered during the D3 operative dentistry course. Studies are discussed at his time. The treatment option is not provided in the clinics currently.

Columbia: Covered in pre-clinical lecture and used clinically in selected cases

Tufts: No

NYU: Lectures but not clinically

UConn: No

Temple: Discussed in the pre-clinic didactic curriculum but not taught hands on in the lab.

StonyBrook: No

Rutgers: No

11) What are the materials and selection criteria for complex posterior restorations?

Consensus: all schools agree on ceramic or gold inlay, onlay or full coverage gold, PFM or ceramic.

Not composite

UPenn: Complex posterior composite restorations are discouraged unless they are specifically for a crown build up procedure. Inlay/only procedures (gold and porcelain) are taught as the most ideal for cuspal overlay situations, followed by full coverage.

Columbia: Complex posterior restorations are indirect ceramic or cast gold. Amalgam is used if economics are a factor, rarely composite unless tooth is going to be prepared for full coverage subsequently.

Tufts: Amalgam and composite resin. Indirect are PFM, ceramic crowns, inlays and onlays; Direct Restorations vary according to many diverse patient requirements with preference given to onlays and/or crowns.

NYU: Amalgam (see previous answer), cast esthetic materials, composite resin. Selection depends on location, size of lesion, occlusion and economics.

UConn: Complex direct composite restorations are discouraged. Onlay or full coverage is usually recommended.

Temple: Amalgam, composite, ceramic, occasional gold. Selection based on the width of the isthmus and unsupported cusps determine capping.

StonyBrook: It depends on size, location and accessibility. Materials of choice are amalgam, porcelain, resin nano ceramic, PFM or gold.

Rutgers: Direct: Amalgam in high stress areas and when isolation cannot be maintained, otherwise composite. Indirect: Gold inlays/onlays for bruxers, and extremely high stress areas, ceramic inlays and

onlays or PFM crowns otherwise

12) How often are onlays provided as treatment vs full crowns?

Consensus: Onlays are frequently provided but less frequently than full coverage.

UPenn: Inlay/Onlay procedures are frequently done. Gold and ceramic. Exact statistics are not available at this time but they are done less frequently than crowns.

Columbia: Recommended whenever remaining tooth structure will allow.

Tufts: Onlays are not considered as much as full coverage crowns.

NYU: 1 onlay per 15 units of full crowns.

UConn: More full coverage than onlays are provided.

Temple: Full crowns are treatment planned more often than onlays. Gold onlays will become increasingly rare as ceramic techniques (scanning and milling) improve.

StonyBrook: More full crowns than onlays

Rutgers: Depends on the amount of tooth structure remaining

13) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

Consensus: Many schools provide CAMBRA kit materials

UPenn: No

Columbia: No

Tufts: Recommended for enamel remineralization. Enamel pro fluoride varnish, MI Paste, Prevident 5000

NYU: No

UConn: CAMBRA products

Temple : Ceramir cement

StonyBrook: Kits provided in CAMBRA protocol: 1.1% Sodium fluoride, 0.05% sodium fluoride rinse, xylitol gum, calcium phosphate supplement, saliva substitutes, arginine bicarb/calcium carb softchews.

Rutgers: No

14) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

Consensus: Most of the schools do not teach pins and amalgambond. Those that do use it sparingly in clinical cases.

UPenn : No

Columbia: No

Tufts: Yes, sometimes

NYU: No

UConn: Yes we teach pins , No amalgam bonding

Temple : Yes

StonyBrook: No pins. All-bond for amalgam bonding

Rutgers: Pins are rarely used, Amalgambond never

15) Liners, Bases, and Cements. Which ones are being used for what purposes?

Consensus: Protocol for all schools is about the same . See below.

UPenn: Under Amalgam: CaOH in the deepest area

Columba: CaOH within 1 mm. of the pulp chamber, GI cement to cover .

Tufts: Liners Dycal within .5 mm of the pulp. RMGI over the Dycal. Vitribond plus RMGI over Dycal or as a liner alone. Other cements are RelyX, Unicem, RelyX plus RMGI, Variolink for veneers. TempBond NE for temporization.

NYU: Liners and bases are rarely used under intracoronal restorations CaOH and RMGI when indicated and RMGI and Resin cements are used.

UConn: CaOH in deepest area (.5 mm or blushing) followed by GI. Resin cements or RMGI are used.

StonyBrook: Liner- Dycal, Life, Fujilining LC, Vitrebond. Bzse – Equia. RelyX Luting Plus, RelyX Unicem, NX3 Nexus cement.

Rutgers: Liners: CaOH (Dycal) or flowable GI (Dyractflow), Bases: GI (ketacfil), RMGI (photacfil), Cements: Compmer, ZnPhos

III) Student/Program Assessment

- 1) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

Consensus: No schools do this for faculty directly. For students most use production /points/case completions as a requirement and reap the benefits indirectly.

UPenn: Not the case and has not been reported as so.

Columbia: Faculty No. Students yes; have a requirement for completion of eight complex and twelve simple comprehensive care cases in fourth year.. This gives the student a large variation of clinical experiences, can evaluate case completion and recall, and patient have their cases finished.

Tufts: Faculty – No. Students have a benchmark of 1000 points calibrated to clinical production. Works well for most students except when patients do not show up.

NYU: All students have minimum experiences in each discipline and may be broken down into more specific procedures. Since we work on a comprehensive care model production numbers re calculated and play a role in determining the grade of each student.

UConn: No to faculty, No for students

Temple: Using a broad definition of reward, student grades for the clinic are based on a quantity/quality formula. Because clinical grades are based on a matrix of quantity and quality a minimum quantity is necessary to achieve a passing grade. This insures minimum number of experiences for the students, Quality should show improvement over time.

StonyBrook: No. The final grades and requirements are determined by each clinical course director. Rewards could be in the form of sessions accrued for make up time.

Rutgers: Final grades are calculated by 50% quality (competency exams) and 50% quantity (clinic procedure points). Valid ? Yes. Repetition is the key to success.

- 2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

3)

Consensus: Agree on principle. Methodology varies.

UPenn : No answer

Columbia: Directors and Chairpersons must re-establish the dominance of Operative Dentistry in academics and in serving the public. We have a Division of Operative Dentistry. Intra – coronal restorations and single tooth restorations have been and continue to be the province of Operative dentistry – direct and indirect restorations of all kinds, amalgams and composites, inlays, onlays, veneers, single crowns. Re-establish the Masters degree in Operative Dentistry.

Tufts: Emphasis should be on prevention education, oral hygiene, esthetics and focusing on keeping restorations on the conservative side. Preserve rather than cutting.

NYU: Yes it should retain its own identity – There should be a Division of Operative Dentistry

UConn: Should a recognized discipline

Temple: The broad definition of operative dentistry includes all operative procedures performed on a single tooth. The short list would include veneers, direct restorations (amalgam and resin), core build-ups, posts, pins, indirect restorations (gold, ceramic crowns). Maintaining operative dentistry as its own discipline would benefit academics but not necessarily general practitioners in private practice, Operative dentistry needs to take back the narrative regarding its position in academics.

StonyBrook: Operative Dentistry is the major educational discipline within our dental schools to teach future dentists how to provide direct and indirect restorations as part of patient service to meet an exceptionally great patient need. Operative Dentistry suffers because of minimum advanced educational and research programs for not being considered a specialty. We should promote the discipline and provide more opportunity for advanced (MS) education and research.

Rutgers: None. Operative Dentistry should be taught as a component of all restorative dentistry procedures.

- 4) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

Consensus: All host traditional exams. Some would like to see a patient free exam

UPenn: As long as we have State Dental Boards that want patient base exams we will need to continue with the traditional bard exams.

Columbia: Traditional. Will try the “Buffalo” model next year. Would like there to be non-patient based exam.

Tufts: Hosts traditional board exams. We would like to see a tyodont based exam rather than patient based

NYU: We still host a traditional board examination. No alternatives being considered.

UConn: Host the traditional Board Exam

Temple: Currently have traditional board exams

StonyBrook: Yes. WE are considering the “Buffalo” model next year.

Rutgers: Rutgers hosts the CDCA exam. No alternates are being considered.

- 5) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

Consensus: All are doing it or have the systems in their immediate plans.

UPenn: We have not done this to date, but investigated the possibility aggressively and would like to The deterrent foe us has been cost.

Columbia: Using plan-scan (Planmeca) in our preclinical course.

Tufts: E4D for student projects is in the works

NYU: Not applicable

UConn:

Temple: Currently not using digital imaging for student project grading.

StonyBrook: We do not use either currently but both are being considered and one will be instituted soon

Rutgers: Digital imaging for project grading is not used at Rutgers

- 6) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a “one and done” approach? Please provide rationale for the choices.

Consensus: All schools appear to be the same. Clinical competency exams or skill assessments with remediation , graded by calibrated faculty.

UPenn: Multiple clinical competencies: Operative, Caries risk, Treatment planning, Restorative: Composite Class III, Composite Class II, Amalgam Class II, Fixed Prosthodontics, All metal crowns, and PFM crown/bridge preparations. Graded by two calibrated faculty, blinded from each others grading.

Columbia: Preclinical simulated skill assessments in all disciplines and clinical skill assessments in all disciplines. Graded by calibrated group leaders. Unsatisfactory assessments must be followed by remediation and re-assessment.

Tufts: Competency exams are given in every discipline. In operative; Class II and III preclinical and clinical , 2 anterior composite, 2 posterior composite and 2 class II amalgams. Students take a “mock board” examination. 1 crown CE , 1 denture CE, and patient management.

NYU: Patient competency Class II and Class III, Prosthetic manikin simulation . Grading is done by selected, calibrated faculty. These are part of graduation requirement to determine if students have reached a level of competency expected of a general practitioner.

UConn:

Temple: Students are required to take skills exams in the junior year composed of: the individual steps or procedures which comprise the (rubber dam placement, preparation design, caries removal, base placement , matrix application, final restoration) in the senior year include treatment planning, class II amalgam or composite and class II composite, mock board exams for the class II and III restorations and ceramic crown and three unit bridge. Full time faculty usually do these assessments. All sections of the exam must be passed in order to pass the exam. A failure in any section fails the exam.

StonyBrook: Cambra competency, Caries removal, DxTx, in year 2, Two formative and one summative competency in year 3 ; Class II and Class III, and 13 competencies in year 4. Satisfactory performance on each part of each exam is required.

Rutgers: Third year: caries removal competency, one or more of the following – Class II Amalgam, Class III composite, Class IV composite, Class V amalgam or composite, complex amalgam or composite; Fourth year: all of the third year plus Class II amalgam on a mock board exam and a class III composite mock board exam. No competency exam can be taken until the student has demonstrated proficiency during regular daily exercises. The exams are graded by calibrated restorative faculty.

IV. OTHER

V. REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

Consortium of Operative Dentistry Educators (CODE)



REGION VI (SOUTH) ANNUAL REPORTS

Region VI Director:

Dr. Mary Baechle

Virginia Commonwealth University

Richmond, VA

Region VI Annual Meeting Host:

Dr. Michael Yacko

Meharry Medical College School of Dentistry

Nashville, TN

Region VI Annual Report Editor:

Dr. Mary Baechle

Virginia Commonwealth University

Richmond, VA

CODE REGIONAL MEETING FORM

REGION: VI

LOCATION INFORMATION FOR 2014 REGIONAL MEETING

University: Meharry Medical College School of Dentistry

Dates: October 7-9, 2015

Chairperson: Dr. Michael Yacko

Phone # 615-327-6395

University: Meharry Medical College, School of
Dentistr

Fax #

Address: 1005 D.B. Todd, Jr. Boulevard

E-mail myacko@mmc.edu

Nashville, TN

List of Attendees: Please complete the CODE Regional Attendees form (See next page)

Suggested Agenda Items for Next Year:

None Submitted

LOCATION INFORMATION FOR 2015 REGIONAL MEETING

University: University of Louisville School of Dentistry

Dates: TBD

Chairperson: Dr. Michael Metz

Phone # 502-852-6168

University: University of Louisville School of
Dentistry

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Fax: 901-448-1625

DEADLINE FOR RETURN: 30 Days post-meetingAlso 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 REGIONAL ATTENDEES FORM

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McShan, Valencia	Meharry Medical College			vmcshan@mmc.edu

*(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as **PDF files** for utilization in the Annual Fall Regional Report) 2013*

NATIONAL CODE AGENDA







*(Please cite the evidence were applicable. If utilizing reports/forms/schedules from your Regional schools, please submit these as **PDF files** for utilization in the Annual Fall Regional Report) Region VI School Abbreviations*

UAB	University of Alabama	MMC	Meharry Medical College
UFL	University of Florida	UNC	University of North Carolina
ECU	Eastern Carolina University	NOVA	Nova Southeastern University
GRU	Georgia Regents University	UPR	University of Puerto Rico
UKY	University of Kentucky	MUSC	Medical University of South Carolina
ULSD	University of ULSD	VCU	Virginia Commonwealth University

**CONSORTIUM OF OPERATIVE DENTISTRY
EDUCATORS SOUTHEASTERN REGION MEETING
OCTOBER 7-9, 2015**







**MEHARRY MEDICAL COLLEGE
DEPARTMENT OF RESTORATIVE DENTISTRY**

NATIONAL CODE AGENDA

	V		U of L		LE
	C				CO
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UNIVERSITY OF NORTH CAROLINA (UNC)
 UNIVERSITY OF LOUISVILLE (U of L) UNIVERSITY OF
 FLORIDA (U of FL)
 LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE (LECOM) GEORGIA
 REGENTS UNIVERSITY (GRU)
 NOVA SOUTHERN UNIVERSITY (NOVA) UNIVERSITY
 OF KENTUCKY (UK)
 MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC) UNIVERSITY OF
 PUERTO RICO (U of PR)
 UNIVERSITY OF ALABAMA (UAB) Addendum EASTERN
 CAROLINA UNIVERSITY (ECU)

2015 NATIONAL CODE AGENDA

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			U		M

I. Admissions and Retention

1) Do you feel your admission Committee does an adequate job of screening and accepting students that will succeed in dentistry? Give evidence for your answer.

Yes. Evidence listed from schools was very similar and included: looking at the totality of each application and not simply numbers, thorough interview and admissions process including rubrics and calibration, students of good character, good retention rates, good passing rates on national and regional boards, good acceptance rates into post-graduate programs, graduating on time and successful careers.

2) Is the applicant's dexterity evaluated as part of the admissions process? Do you feel it should or shouldn't be evaluated? Give reasons for your answer. If you propose pre-acceptance evaluation, what would you suggest as an evaluation method?

With the exception for international dentist programs (NOVA), no school evaluated dexterity as part of the pre-doctoral admissions process. Some schools ask about experiences involving manual dexterity skills, such as musical or artistic backgrounds. Once accepted, students at U of FL are given a carving exercise to assess skills and the ability to follow directions. About 1/3 of the schools thought evaluating dexterity should not be part of the admissions process (these skills develop during dental school), about 1/3 felt it should (potential indicator for success) and about 1/3 did not express an opinion. A proposed evaluation bench test from NOVA included Class II Amalgam Preparations and Full Gold Crown Preparation.

3) Has your Dental School accepted Student(s) who are not well suited to become a dentist (consider behavioral, ethical, moral, and innate abilities in your answer)? Please give examples.

Most schools stated that although it is unlikely, a very small number of students are admitted to dental school who later on are discovered to not be well-suited to become dentists. Sometimes, students determine they would rather pursue a different career.

4) How difficult is it for a student to be dismissed from your Dental School? When was the last time your school dismissed a student? What was/is the reason for most dismissals? Academic Performance? Behavioral? Combination of both?

Most schools stated they have had a very small number of students dismissed for academic issues, and some schools also stated a very small number for behavioral reasons. Schools made great efforts to help struggling students with remediation, and also stated that it is best for students to depart earlier in the curriculum before time and financial investments become too large.

5) Does your Dental School facilitate career counseling and/or tuition refund for dismissed students?

Schools responded that they abide by university policies in regards to any type of refund, which varies by amount/percentage and circumstance (some do not give refunds for dismissed students). Additionally, some schools stated that they facilitate counseling or refer students to the appropriate resources.

6) Are students' tuition insured? If so, by whom? What is the cost?

Most schools responded no. A couple of schools stated they were unaware of the practice. GRU reported yes, but only if the student becomes disabled and cannot continue in school.

7) Does your school facilitate the transfer of a dismissed student to nursing, pharmacy or other profession, or another dental school?

Most schools responded no. U of L and NOVA responded yes. U of L and VCU mentioned writing letters of good standing/support where appropriate.

II. Materials/Techniques/Curriculum

1) Does your school teach cutting off BruxZir or Emax crowns that have been cemented/bonded to natural teeth? If so, what method/burs do you use?

M

M

C

No. We do not teach BruxZir specifically. However, pre-clinically we teach how to remove PFM and Ceramics using diamond and carbide burs. Clinically, students will remove any crown requiring removal

V

C

U

Not formally

U

N

C

We teach students how to cut off and remove PFM and all ceramic restorations. They use coarse diamond burs to cut through ceramics, great white carbide burs to cut through metal cores and coarse diamonds to cut through ceramic cores.

U of FL

Yes, we use a crown removal system from Brasseler USA for Zirconia/PFM removal, which includes a carbide metal cutter, carbide alloy remover, diamond occlusal surface and crown removal and a hand instrument.

LECOM

Yes we use Brassler ceramic crowns removal burs. (I am in preclinical only)

G

Yes, taught in Jr year in the esthetics course using fine grit diamonds.

R

U

Aggressive burs and lots of water

U

K

U

of

L

Yes. Students are taught in their pre-clinical indirect course, esthetics course and advanced concepts course. Students are instructed to place a buccal, lingual and occlusal groove through the materials with a low-cost, fine-grit diamond instruments, used at high speed, with a very light sawing motion and high water spray. A Hu-Friedy screwdriver-like crown remover instrument can be used to begin chipping the ceramic away. Retained chips still on the tooth can be cut off with a diamond bur or use a straight operative dentistry chisel. Place it at the juncture of the remaining chip and the tooth structure.

MU

SC

Yes, Great White burs, and lots of them. In non-endodontically treated teeth, the heat generated by doing this is often fatal to the pulp. I generally advocate repairing these crowns rather than replacing them, when feasible.

U of PR – No

NO

VA

We use a bur kit from Komet called the All Ceramic Cut, Finish and Polish. The specific bur is 4ZR014. We are also planning to incorporate a laser technique that has been published whereby laser energy is used not to cut off the crown but debond the restoration. There are two articles by Dr. Jeffrey Cranska and an article Morford CK, Buu NC, Rechmann BM, et al. Er:YAG laser debonding of porcelain veneers. *Lasers Surg Med.* 2011;43:965-974.

2) Does your school teach air abrasion/co-jet techniques? If so, where in the curriculum? What is the change in the % of amalgam being done in the clinic if you teach this technique?

MMC - It is introduced in a preclinical setting, but not utilized in the clinic.

V

C

U

In the D2 year, students are taught how to air abrade the cast post surface and are also taught that the main purpose of abrading the intaglio surface of a restoration is not to clean the debris, but to provide a micro-level retentive surface to ensure the bond. That is why companies mandate to use a particular size particle for the abrasion - most cases 50-micron Al₂O₃ particles, some cases 37- micron particles. And also, that is why when the cementation strategy is to lute (not bond); this is not mandatory. For bonding protocols, it is mandatory to provide some kind of micro-roughening the intaglio (sandblast, acid etch, etc.). Our school does not recommend sandblasting any acrylic resin intaglio, except to assist/remove heavy deposit of hardened cements. This is due to the fact that acrylic resin surfaces are already porous enough. Also, the Al₂O₃ tend to leave a dark stain on the surface if not used properly, and this can affect the shade of the resin crown. The use of air- abrasion intraorally for preparing teeth to receive restorations is mentioned in D-1 operative lecture, but is not performed in clinic.

UNC – NO

U of FL

We do mention the technology and it is available in clinics, it is not part of the curriculum. This does not affect the number of amalgams done in clinic because different materials have different indications.

LECOM - No

G
R
U

Yes. If so where in the curriculum? Jr. Esthetics pre-clinical course What changes in the % of amalgam being done in the clinic?

For the 2 clinical years- Junior and Senior clinics-

Class of 2012 (n=66) did 1621 Amalgams (24%) & 5038 Resins= 6659 Total (101/student)

Class of 2015 (n=76) did 1169 Amalgams (15%) & 6592 Resins= 7761 Total (102/student)

UK – No, air abrasion. Very little amalgam done in clinic.

U
of
L

This technique is taught in our pre-clinical and clinical pediatric program through minimal invasive dentistry. However, the DMD clinics do not currently employ air abrasion minimally invasive preparations [sic]. We have had a shift from 70/30 to 50/50 towards more posterior composites closely monitored for optimal clinical situations.

MUSC – No

U of PR – No

NO
VA

Yes we teach air abrasion techniques. It is taught in the Cosmetic Dentistry course and in the clinic. We use air abrasion units to air abrade the internal surfaces of crowns prior to cementation.

3) What is the percentage of non-metal ceramic crowns vs. PFMs done in clinics? What type of cements are begin used and where. (Metal-based, Ceramics, Post and Cores, Veneers)

M
M
C

85-90% PFM crowns. Cements used FujiCem 2 and Multilink

V
C
U

During the 2014/2015 season, the breakdown (roughly 13%) is as follows: 113 all porcelain crowns

849 PFMs

This does not include veneers, implants or CVCs.

U
N
C

Metal-based: Conventional cements: GIC or RMGIC. If retention and resistance form are poor, self-adhesive resin cement is recommended.

Ceramics: All ceramics- Dual cure adhesive resin cement or self-adhesive resin cement. Zirconica based -Self-adhesive resin cement.

Post &Cores: The decision to use a cast post and core or a flexible post is made on a case by case basis.

Flexible posts are surfaced treated and bonded in place with self-adhesive cement. Metal posts are cemented with RMGIC or self-cure resin cement that contains MDP.

Veneers: Light cure resin cement.

U of FL

Metal-based : 70-80%

Ceramics: 20-30%

Fuji I glass ionomer cement and Rely X Ultimate are the cements used for full coverage crowns. Zinc phosphate is used occasionally to cement full gold crowns.

LECOM - NR

G
R
U

Class of 2012 did 763 total PFM / PF-Ceramic crowns (codes listed) PFM D2750 - (PFM High Noble) 492
PFM D2752 – (PFM Noble) 108 PFC
D2740 – (PF-Ceramic) 163
Ratio PFM : All-Ceramic = 3.7

Class of 2015 did 933 Porcelain crowns PFM
D2750- None
PFM D2752- 522
PFC- D2740 – 411 – note also bigger class size Ratio PFM
: PFC = 1.3

UK

15% non-metal, and growing. Mostly PFM, small % full gold
Rely-X for most, Calibra for veneers. Variolink for some. Proper substrate preparation

U
of
L

We are currently doing approximately 65% metal based indirect restorations and 35% ceramic based restorations. For metal based restorations and zirconia core restorations, we are using Rely-X GI cement. For both pressed and milled lithium disilicate etchable restorations we use Rely- Unicem or Variolink Esthetic.

MUSC- At the present time about 50/50 CAD/CAM has changed this significantly in recent years. U of PR –

20% Non-metal, 80% PFM

NO
VA

Metal-based: 85% of all restorations. Using Fuji Plus Cement
Ceramics 15% (of these 33% are CAD/CAM crowns) of all restorations. Primarily Multilink but also Variolink.
Post & Cores: ParaCore for prefabs and Zinc Phosphate for metal.
Veneers: Variolink
We have a new protocol to treatment plan more all ceramics and more CAD/CAM restorations.

CEMENTS USED

School	Metal-based	Ceramics	Post and Core	Veneers
MMC	FujiCEM 2	Multilink Variolink	FujiCEM 2	Multilink Variolink
VCU	FujiCEM 2, Durelon, Panavia 21	FujiCEM 2, Durelon, Panavia 21	FujiCEM 2, Panavia 21	NX3 Nexus
UNC	Conventional cements: GIC or RMGIC or Self adhesive	Dual cure or self-adhesive adhesive resin	self-adhesive cement RMGIC or self-cure resin	Light cure resin
U of FL	Fuji I glass ionomer Rely X Ultimate Zinc phosphate			
LECOM	Rely-X GI	Rely-Unicem or Variolink Esthetic.		
GRU	RMGI	See question 8	RMGI	See question 8
UK	Rely-X			Calibra
U of L	Rely-X GI cement	Rely-Unicem Variolink Esthetic		
MUSC				
U of PR	Glass Ionomer Hybrids	Resin Based	Resin Based	Resin Based
NOVA	Multilink Variolink.	Multilink Variolink.	ParaCore Zinc Phosphate	Variolink

4) Is your school considering removing amalgam from curriculum? If so, why? Or why not? Is the decision evidence-based?

MMC

No. Indications for amalgam are based on caries risk assessment and evidence based case selection.

VCU - No. There are still clinical indications for it. UNC – No

There is NO scientific evidence to indicate that silver amalgam restorations pose any health risk for patients. In fact it has its own advantages such as self-sealing capability and a great substitute for composite restorations in large cavity preparations where esthetics is not a concern.

Is the decision evidence-based? Yes.

Hoover & Goldwater, Arch Environ Health, 1966; 12: 506 Frykholm. K.O, Acta Odontol Scand, 1957
Ertas et al, Human & Experimental Toxicology. 2014; 33: 873-877 Mackert JR & Berglund A, Crit Rev Oral Biol Med. 1997; 8: 410

U of FL

No, we will continue to teach and use the material when indicated. Currently, the U.S Food and Drug Administration (FDA) and American Dental Association (ADA) support the position that amalgam is a valuable, viable and safe choice for dental patients

LECOM - No

GRU- No

UK

Amalgam and Composite incorporated into one course this year with a case-based approach rather than a materials-driven orientation.

U of L

No. There are no long term clinical trials showing that amalgam is unsafe for patient use. Additionally, most of our patients are high caries risk with subgingival margins.

MUSC

Absolutely not. It is still the material of choice for large restorations on molars, both for strength and cost reasons.

U of PR - No. Amalgam still a viable material based on evidence.

NOVA

No, we are not considering removing it. Amalgam still has its indications. It is still indicated for high caries-risk patients, posterior teeth that cannot be isolated with rubber dam and non-esthetic areas.

5) What is being taught and what is the future of gold as a restorative material in your dental school? What are you using as a substitute?

MMC

Gold foils and inlays are being taught from a historical perspective pre-clinically and available clinically upon request. Full coverage gold crowns are taught in the pre-clinical Prosthodontic course

VCU We still teach gold as a restorative material and place gold crowns in clinic.

UNC

Gold is used for both single crowns and gold onlays at our school. We believe that gold is the best material in certain circumstances, such as second molars, severely worn teeth particularly on molars. Gold onlays are an excellent option for cuspal coverage restorations while preserving natural tooth structure. However, we also use contemporary materials such as full contour zirconia which may be used as a substitute for gold. More data is needed on clinical outcomes before this material and others can replace traditional options.

U of FL

We teach the preparation of indirect posterior gold restorations (onlays and full crowns). Gold should be taught in dental school because it has been proven as a material with excellent mechanical properties and preparations are more conservative. If we need to substitute gold for esthetic reasons or due to the increase of the price of gold, a direct or indirect resin-based composite restoration or full coverage crown would be considered.

LECOM

We do teach full gold crowns and inlays in preclinical- not done regularly in clinic

G R U

Gold crowns are still taught in the 2nd year fixed pros pre-clinical course and performed in student clinics. A great option in non-esthetic areas

U K

Gold is still the "gold standard" in some situations. Zirconia is being used in some circumstances instead.

U of L

We still actively teach cast gold restoration in our DMD curriculum. Due to their favorable mechanical properties and least aggressive preparations, we use on all second molars needing indirect prosthesis with limited occlusal space.

MU SC

We do only some all gold crowns and those are harder and harder to sell. Zirconia and CAD/CAM (eMAX) are taking its place.

U of PR - It is taught in the preclinical courses, but clinically porcelain and RBC predominate.

NOVA

We teach an all metal preparation in the preclinical integrated restorative dentistry course at the end of the D1 year. We do not encourage all gold restorations in the clinic, but will accommodate patients that want one replaced or that prefer gold restorations. There is an upcharge for this restoration and make a request for an Argen/Jensen alloy with the minimum amount of gold and ADA specs for high noble. We ask the patient if they want a yellow or silver appearing restoration.

6) Is it possible for a student to graduate from your school and never experience primary caries removal? (i.e. only experience replacement of defective restorations). If so, is this a concern? What do you do to ensure that students are getting adequate training/experience?

MMC - No

VCU

No. Our students do a lot of restorative work; they are required to complete a certain number of surfaces.

UNC – No

U of FL

Based on the caries prevalence of our community, it is unlikely our graduates would not experience primary caries removal. There is no concern with lack of experience on primary caries removal; however, there is a concern with over-treatment of defective restorations. Each student is assigned to a team leader and patient coordinator who are responsible to ensure that students are receiving the suitable patient pool that allows adequate training/experience.

LECOM

Absolutely not. We do many exercises in preclinical with extracted teeth and there is plenty of caries in our clinic

G
R
U

NO- the various competency exams (Class I, V, II, III in junior year) require the presence of caries.

UK - Not possible

U of L

No. As part of our clinical operative competency assessments, students must prepare virgin teeth with primary caries. Students perform several minimal clinical experiences prior to becoming competency eligible.

MUSC- No, that is not possible or even conceivable, given our patient pool U of PR

No. Based on student performance in competency exams. They are getting adequate training

NOVA

No. The students are divided into team leader [sic]. That way it is easier to manage small groups of students. Each student does certain number of competencies which are ideal preps and very often that are preparing/restoring primary caries.

7) **How does your school manage rampant caries patients? Please provide evidence where possible.**

M
M
C

CAMBRA is used to identify high caries risk patients. Patients with rampant caries are referred to the perdoctoral Operative Clinic for gross caries removal and sedative fill or definitive restorations. Cases beyond the scope of the perdoctoral clinic are referred to the graduate program.

V
C
U

We do CAMBRA, and have Extreme High Caries risk protocol letters for xerostomia patients and High Risk letters for non-xerostomia patients, based entirely on CAMBRA clinical guidelines.
Caries Control restorations are taught in the D1 operative course, where indicated. (Please see 4 attached forms).

UNC

Before making treatment plan, the patient's risk status is assessed. The patient may be at a moderate to high caries risk due to consumption of carbohydrates, reduced salivary flow, poor OH, etc. The patient is required to complete a 4 day diet history following which a dietary evaluation/ consultation will take place with the provider. Patient education is considered one of the most important tasks in caries management.

The students are taught to distinguish between reversible caries lesions and the ones that need definite restorations. Patients are prescribed high FI toothpaste, rinses and use of xylitol chewing gum. A control phase treatment is initiated to eliminate all caries lesions. During this phase quadrant restorations are completed and restored with conventional Glass Ionomer. The patient will be monitored for maintenance of 'caries free state' before definitive restorations are placed.

We also teach that "If a layer of softened dentin could be expected to be recalcified, it would be preferable to save it because dentin is the best protective barrier for protection of the pulp".¹

1. Fusyama, T. and Kurosaki, N.: Structure and removal of carious dentin. Int Dent J 1972; 22: 401

Other references:

Kidd, EA: caries management. Dent Clin North Amer 1999; 43: 743-764.

Barkley, Robert F.: "Successful Preventive Dental Practices". Preventive Dentistry Press, Macomb, ILL. 1972

Bader, JD and Brown, JP: Dilemmas in caries diagnosis. J Am Dent Assoc 1993; 124: 48-50

Anderson, M.H., Bales, D.J., and Omnell, K.A.: Modern management of dental caries: The cutting edge is not the dental bur. J Amer Dent Assoc 1993; 124: 37-44

U of FL

Patients with rampant caries in need of immediate care are treatment planned for “acute phase treatment” before the typical disease control phase. Acute phase treatment may include extractions, root canals, determination of restorability, and stabilization of deep carious lesions. In operative dentistry, the deep carious lesions are excavated for removal of all infected dentin and affected dentin at the margins and up to the DEJ and receive temporary restorative material (RMGI/Fuji II LC). Following the acute phase, the disease phase treatment planning occurs with a caries risk assessment and management plan, which includes patient education on caries prevention.

LECOM

We teach in preclinical Caries risk assessment and CAMBRA. We demonstrate how to do a caries control plan before definitive restorations are done. We teach that restorations do not decrease caries risk and that before definitive restorations are placed, the student must reduce caries risk first.

GRU

At GRU, rampant caries is managed both surgically and non-surgically. A Caries Risk Assessment is done on all patients, regardless of caries level, but in patients with any active caries, the determination is made as to whether the concern is primarily dietary, salivary, or both. Oral hygiene is evaluated routinely as well, but in the context of the other two evaluations, not as the primary concern. The CAMBRA protocols are followed once the etiology is determined. For a high caries rate patient, that usually includes the following treatments:

Preventive Treatment Planning		
Risk Category (IADR)	Adequate saliva	Reduced salivary flow
Low (0-2)	<ul style="list-style-type: none"> Brush 2-3 x per day with 1000 ppm toothpaste (pts > 6 yrs) Advise "Spit, don't rinse" Diet: Advise to keep simple carbs to less than 3-5 per day 	<ul style="list-style-type: none"> Brush 2-3 x per day with 1000 ppm toothpaste (pts > 6 yrs) Advise "Spit, don't rinse" Diet: Advise to keep simple carbs to less than 3-5 per day
Mod (3-9)	<ul style="list-style-type: none"> To Low Risk items add: Analyze diet for current sources of simple carbs; advise substitutions Bedtime: Rinse with 0.05% Na F OTC rinse (ACT) Office F varnish q 6 months 	<ul style="list-style-type: none"> Recommend xylitol or other sugarless gums, mint, candy Recommend xylitol and green tea catechin products: MighTeaFlow gum, mint, spray, or rinse
High (10+)	<ul style="list-style-type: none"> Add Moderate Risk items, except substitute: Office F varnish q 3 months Bedtime- 5000 ppm F toothpaste (any type) Advise "Spit, don't rinse" 	<ul style="list-style-type: none"> Bedtime: Brush with 5000 ppm F toothpaste with additional Ca and P. Listed under "Toothpaste" in axiUm Medication list. Consider Rx salivary meds: pilocarpine or civemiline
Extremely High Risk	<ul style="list-style-type: none"> High risk patients with salivary hypofunction: History of radiation, Sjogren's disease, meth use, or Chemo with significant salivary gland damage. Follow High risk, except substitute: Does not apply 	<ul style="list-style-type: none"> Bedtime: Custom tray, Rx 5000 ppm F gel

Non-surgical- Extensive dietary counselling on frequency of simple carbohydrate intake, 5000 ppm F toothpaste 2x per day with an additional 2x per day of 1200 ppm toothpaste encouraged, all “Spit, don’t rinse” protocol. Xylitol gum (if able to chew gum) or lozenges (if unable to use gum) are recommended. If salivary insufficiency is observed or suspected, green tea products are recommended instead. If salivary flow is significantly reduced, salivary stimulant medications

(pilocarpine, Civemiline are prescribed). Use of xylitol Pt's are put on 3 month recall for dietary counselling reinforcement, OHI, and F varn. Here are our Preventive guidelines:

Surgical- Early and expeditious excavation, Vital Pulp Therapy as needed, and provisional restoration with resin-modified glass ionomer. Some call this "Caries Control," but that term is discouraged as it is so non-specific. As disease control is achieved, these provisional restorations can be partially removed and/or overlaid with other materials if in occlusion or if esthetics of RMGI is unacceptable.

UK

Our school teaches disease control first. We would use GI as a temporary restorative until OH and risk is controlled.

U of

L Rampant caries patients are provided a phase 1 (disease control) treatment plan to include caries risk assessment and preventive treatment planning. We stress determining the etiology of the caries prior to placing any restoration; poor oral hygiene, limited fluoride exposure, high counts of cariogenic bacteria, dietary evaluation, salivary flow and composition, etc.

MUSC

What I teach in Operative I:

After beginning the high caries rate protocol (high F toothpaste, etc);

1. Prepare all cavitated lesions quadrant by quadrant, removing gross caries and leaning the margins; then fill all teeth with Fuji Triage or Fuji IX. Deep caries may remain.
2. Begin antimicrobial therapy as indicated
3. Begin restoring all teeth with permanent restorations, as many teeth as possible at each appt.
4. Apply F varnish at each 3 month recall, new X-rays at 1 year.

But this is not what happens in 99% of cases due to patient inability to pay for or unwillingness to go through with caries management. What actually happens is:

1. Begin high fluoride toothpaste
2. Temporize or extract symptomatic teeth
3. Restore teeth one at a time, extraction or doing endo as needed
4. The patients only come for 6 month recalls and often don't want to pay for the F treatment.

U of PR

Look for past dental history, social determinants, habits, follow by advice and treatment with fluoride, varnish with fluoride and Glassionomer Hybrids temporary restorations.

NO

VA

We use the CAMBRA model. If a patient has rampant caries we will work to get this patient caries balanced. We will identify risks factors, evaluate diet analysis. The student will develop a preventative treatment plan. Pt will have lesions excavated and restored with RMGI for further evaluation for a definitive treatment plan.

8) **What efforts do you make to give all students a uniform experience in clinic?**

M
M
C

Clinical Affairs assess student's needs and distribute patients to ensure students have a variety of different procedures while ensure they complete the minimal experiences required.

V
C
U

Group Practice Leaders have meetings with each other and their students. In general, students get a uniform experience in restorative (operative) and removable procedures; there is more variety in experiences with the number and type of fixed prosthodontic restorations.

Each student is assigned to a patient care coordinator (PCC) who makes patient assignments. The PCC and group practice director along with other members of the clinical affairs office ensures that all students receive similar clinical experience. Their patient pool and charts are audited from time to time to confirm this process.

U
N
C

U of FL

Each student is assigned to a team leader and patient coordinator who are responsible to ensure that students are receiving a well-rounded patient pool that ensures adequate training and uniform experiences. In operative dentistry, the students are expected to complete a minimum of one procedure prior to challenging level 1 skills assessments in the junior year. These are semi-independent assessments that prepare students to challenge the competency skills assessments in their senior year. Therefore, they will complete a minimum of three; caries management, class II, complex class II, class III, class IV, and class V preparations and restorations. In addition, they must complete a certain number of RVUs each semester and to be certified for graduation.

LECOM

This is a clinical issue that is being addressed. I feel that without a requirement system, uniform experience is difficult-especially when teaching comprehensive care. The students' patient pool are very different

G
R
U

Junior year- students have very similar direct and indirect restoration requirements and strictly defined competency exam eligibility criteria. Senior year- experiences vary with their comprehensive care patients' treatment plans but minimal expectation levels are monitored for Pros, Perio, Endo, and Oral Surgery. Senior Clinical Competency eligibility criteria provide some uniformity.

There are minimum course requirements within our comprehensive care model of patient care. Team leaders closely monitor types of procedures performed along with didactic course directors.

U
K

U
of
L

We currently employ 12 comprehensive general dentistry clinics. Six are for D3 students, and six are for D4 students. Each group has two dental faculty group managers that track and monitor student patient experiences. The D3 and D4 groups have one staff manager each that work closely with our director of clinics to assign patients by student needs. All students do rotations in Oral Surgery, Endodontics, emergency clinic, patient screening, Pedodontics and recall in both the D3 and D4 years.

MU
SC

A great deal. The Academic Performance Committee reviews each student at the end of each semester. The Oral Rehabilitation Department (which includes the restorative division of which Operative is a part) looks at what specific procedures each student has accomplished. Recommendation is then made to patient scheduling to be sure the student has opportunity to perform. We do not have specific procedure requirements for graduation. Rather, there are required hours of experience in each discipline.

U of PR

Students are required to do a minimal quantity of different procedures. Module coordinator control the process.

NOVA

Through screenings, transferring patients from senior students to juniors. The team leader approach tries to keep as uniform as possible.

9) What esthetic procedures are taught in pre-clinical Labs? Who teaches (what department)? Are esthetic procedures taught in an integrated course or in separate courses?

M
M
C

All ceramic restorations are taught in the Restorative Department Inlays, Onlays and Veneers – Operative

All Ceramic Crowns and review all esthetic restorations- Prosthodontics

VC
U Separate: Diastema closure, direct composite veneers, and anterior and posterior composite preparations and restorations are taught in the D1 operative course. Bleaching is taught in the D2 Clinical Skills course. These courses are all in the Dept. of General Practice Dentistry. All- ceramic and PFM crowns are taught in the Fixed Prosthodontic course, in the Dept. of Prosthodontics.

UNC

Class IV direct restorations Composite veneer restorations Veneer preparation and restoration

Anterior crown preparation and restoration

Anterior bonded all ceramic pontic (mostly in case of missing lateral incisors) Natural teeth pontic

U of FL

The Division of Operative Dentistry teaches esthetic inlays/onlays, CAD CAM inlay/onlays, resin cementation, teeth whitening, diastema closure, class IV composite layering and restoration, direct composite resin veneers, and porcelain veneers. These are all taught in our last operative course.

LECOM

In preclinical we teach direct and indirect veneers (as far as the preps are concerned. We do not fabricate any indirect restorations.) The clinic does allow the experience in direct veneers but indirect veneer procedure are being considered. We have our 4th year students at an off-site facility, and I am not sure about what they do there. I will try to find out from the directors there and include the findings in my answer.

GRU

Our Junior Fall Semester Esthetics Course is primarily taught by Operative and Fixed Section Faculty in the Dept. of Oral Rehabilitation. The procedures below are taught in that course.

1. Class IV (layered technique)
2. Composite Veneer
3. Class VI (incisal edge restoration)
4. Porcelain veneer preparation
5. All ceramic crown preparation
6. Cementation of ceramic restorations
 - a. Porcelain veneers- light-cured resin cement (Variolink II or RelyX Veneer Cement)
 - b. Emax Crown: a dual cure resin cement (Duo-link)
 - c. Zirconia Crown: a dual cure resin cement or a RMGI (GRU uses Rely X luting plus)

UK

Esthetics is taught in first year in the "Integrated Operative" course, then again as a separate course in third year.

U of L

Esthetic procedures are taught in many of our pre-clinical courses; Pre-clinical Operative Dentistry, Pre-clinical Fixed Prosthodontics, Esthetics, Core class, Advanced Concepts, and Implants. The responsibility is a team effort between the Department of General Dentistry and Oral Medicine and the department of Oral Health and Rehabilitation

MUSC

bleaching, composite and porcelain veneers, smile design, all taught by Operative. Fixed Pros also covers much of this.

U of PR - Operative pre-clinical course which include RBC, Inlay and Onlays and veneers.

NOVA

Direct resin composite for Class III, IV, V (including restorations for non carious cervical lesions), diastema closure and direct composite veneers. Who teaches (what department)? Cariology and Restorative Dentistry and Prosthodontics. Are esthetic procedures taught in an integrated course or in separate courses? Operative dentistry is part of D-1 Integrated Restorative Dental Sciences laboratory, which runs concurrently with the lecture component. It is a hands-on program integrating the disciplines of dental anatomy, cariology, operative dentistry, biomaterials, occlusion and fixed prosthodontics.

The Department of Prosthodontics is responsible for a number of didactic and laboratory courses where esthetics are taught. Esthetic procedures are taught in our D2 Clinical Practice of Dentistry Fundamentals Course (CPD) that includes a number of basic needs to understand esthetic dentistry. The course is a combined lecture, lab and seminar course such that the student is prepared to start clinic with the basics of smile design, bleaching/whitening, photography and shade matching. A separate Cosmetic Dentistry course is taught where we expand on the Smile Design and also incorporate all ceramic restorations (crowns and onlays), porcelain veneers, and porcelain repair. We teach a separate CAD/CAM restorative dentistry course whereby each student, in groups of 30, gets 24 hours of hands on training with respect to preparations, scanning, designing, milling, staining and glazing and cementation of CAD/CAM restorations. There are also 8 lectures. There is a separate Implant Dentistry Course that is heavily didactically based and which now has two hands on labs that are completed in the summer between the D2 and D3 years. One basic orientation/overview implant lecture is also given in that summer and the remaining lectures are taught in the D3 Fall semester.

10) **Is infiltration of proximal caries with resin taught in pre-clinics or clinically? Is this treatment being provided in the clinics as a treatment option? Please describe technique used.**

MMC - No VCU-
No.

UNC - No

Not currently but use of ICON will soon be introduced in the cariology course and subsequently in predoctoral clinics.

U of FL

Following a recent literature review, it was determined to add this material to our clinical armamentarium. We are currently awaiting approval from our material and devices committee to begin using the Icon system in our student clinics.

LECOM

We teach both amalgam and composite as restorative material. We also teach slot preps to keep tooth loss at a minimum.

GRU - No UK –

N/A

U of L Not sure MUSC -

No

U of PR- No NOVA -

No

11) **What are the materials and selection criteria for complex posterior restorations?**

MMC

Amalgam, Composite, Onlay or Crown. The selection criteria is based on tooth location, oral health and occlusion.

VCU

In the D1 operative course, we teach the clinical guidelines for large/complex restorations and cuspal reduction, and the retentive/resistance features that would be required. We follow the Sturdevant 6th edition text regarding when and how much cuspal reduction to perform and retentive features. Isolation, occlusion, esthetics and what the definitive restoration is/will be are all factors in material selection. We teach how to perform these preparations and restorations using various materials (i.e. bonded amalgam, dual-cured and light-cured composite), and we also teach full-cuspal coverage preparations/restorations for endodontically-treated molars.

UNC Materials that are available at the school for direct restorations include composite resin and amalgam.

Selection criteria includes: extent of the lesion, amount remaining tooth structure, isolation, masticatory forces on the tooth/restoration etc.

U of FL

When determining material selection, there must first be an assessment of the patient's caries risk, remaining tooth structure, load bearing areas and occlusion, ability to obtain proper isolation, the patient's ability to maintain the restoration, and the properties of the available materials.

Direct restorations-

If resin based-composite is selected as the restorative material, proper isolation is imperative, and the patient should have a low to moderate caries risk. Patients with a high caries risk should be controlled before planning adhesive restorations. Amalgam is recommended for core builds-ups, chamber retained restorations, subgingival margins, financial concerns, and when it is difficult to achieve isolation.

Indirect restorations-

We teach both gold and all-ceramic onlays. There are two contraindications for the all-ceramic onlays: the inability to obtain adequate thickness for the material to withstand occlusal forces and the lack of proper isolation at the time of cementation/bonding.

LECOM

Where there is adequate retention, we teach amalgam. If retention is an issue, we teach composite

G R U

If direct- choices are amalgam or resin. Resin is used when isolation is deemed adequate. We do allow use of Isovac when rubber dam cannot be used.

If indirect- choices are Full Metal, PFMetal or PFCeramic Crowns. The use of PFC single unit crowns is increasing in the anterior areas, whereas full metal is still encouraged in non- esthetic/high stress areas (e.g. second molars).

UK - Direct and Indirect: Caries Risk factors and occlusion, cost.

U of L

For direct restorations we predominantly use dental amalgam for complex posterior restorations that may require auxiliary retentive features. Post endodontic cores replacing multiple cusps we predominantly use dental amalgam. For indirect restorations we predominantly use metal based prostheses to limit the aggressiveness of the preparations.

MU SC

Amalgam and composite. With pins if indicated. Amalgam is the preferred material for molars especially second molars but patient preferences are recognized. In recent years we are seeing a steady increase in CAD/CAM onlays.

U of PR-

Occlusion, opposing dentition, RBC, amalgams, Porcelain Inlays- Onlays, Crowns and Implants

NO VA

Amalgam, resin composite (direct, indirect), porcelain. Usually the composite of choice is the Nano- filled Filtek Supreme. In other situations there may be a need to do an open sandwich technique with a combination of RMGI and Composite

12) How often are onlays provided as treatment vs full crowns?

MMC - Very minimally

VCU - Probably <1%. Done on an individual basis in clinic.

UNC

Gold onlays are done frequently in clinic instead of full coverage crowns. Our goal is to provide the students with all the information to make a well thought clinical decision and material choice.

U of FL

We average 3 ceramic onlays per week in our Aesthe-Tech Clinic

LECOM

I will check with clinical faculty

G
R
U

Class of 2015- 26/1169 (2%) single, natural tooth indirect cusp protecting restorations were Onlays vs. Full Crowns; ore common in Sr. clinic as milled E4D cases luted with resin cements.

UK - A small percentage although the technique is taught in preclinical

U of L

Inlays are taught as part of our DMD curriculum but are almost never performed in the clinic.

MU
SC

Rarely in past years but CAD/CAM is changing that. We are presently doing more and more ceramic onlays rather than crowns. All of our recent graduates have done five CAD/CAM restorations; some have done dozens. This year we are starting to teach inlays again.

U of PR- Seldom

NOVA

Our protocol now has that onlays are the treatment of choice for large restorations that at one time would have been a complex amalgam or composite.

13) Are Bioactive Materials being used in Enamel Remineralization in your school? What do you use?

MMC-No

VCU

We are currently looking into this through our Dental Materials Committee (i.e. Activa Restorative, for example). We are Beta testing Ceramir Cement which is bioactive and used to cement all restorations (ceramic, metal).

UNC Yes, in the form of ACP (Amorphous Calcium Phosphate), CPP-ACP (Casein Phosphopeptide and Amorphous Calcium Phosphate) and topical FI applications.

U of FL - We are only using fluoride at this time

LECOM

We teach therapies with fluoride and Ca-P materials (MI paste etc.) I will check with clinical faculty

**G
R
U** We have ClinPro available in the school. 1.1% NaF 5000 ppm fluoride ion & tri-calcium phosphate.

UK- Biotine products, fluoride varnish, rinse, and gel

**U
of
L** Yes. As part of each patients caries risk assessment, an individualized treatment plan is created as determined by the nature of the demineralization. The etiology of the demineralization is address along with an appropriate remineralization therapy. These can include fluoride, xylitol, calcium/ phosphate pastes, salivary stimulants, antimicrobial rinses

**MU
SC** We are not yet doing this. We do discuss MI Paste in the high caries discussion with new patients but do not provide it.

U of PR - None

NOVA

A combination of home care aids such as fluoride prescriptions and MI paste.

14) Are you still using pins or Amalgambond or other amalgam bonding/retention systems?

MMC - Yes, we still us retentive systems

VCU- Yes we are still using pins and amalgam bonding (SBMP). UNC

Use of pins in conjunction with amalgam restorations are currently being taught in preclinical and clinical settings.

Evidence in the literature shows that the bonding amalgam reduces cuspal flexure and may increase retention but this effect is transient. Hence it is not taught or practiced at UNC.

Bonilla, E and White, S.N.: Fatigue of resin-bonded amalgam restorations. Oper Dent 1996.

Mahler, D.B. et al. One year clinical evaluation of bonded amalgam restorations. J Amer Dent Assoc 1996

U of FL

We teach retention features such as grooves, slots, coves and amalgam pins. We present adjunct methods such as metal pins and bonding systems but we use them very seldom, if at all, in the student clinic.

LECOM

We discuss plans in preclinical lectures but do not have exercises in sim because we use plastic teeth. Some of the clinical faculty are using pins with their students but it is not uniform

GRU - Pins - Yes with amalgam, Amalgambond, etc. NO

UK - Pins and amalgambond are taught in preclinic, neither are widely used.

U
of

L We are teaching pin, slot, pot and groove auxiliary retention for large posterior restorations using both amalgam and composite. Literature has shown that Amalgambond provides a slight bond to the tooth but there is no evidence of long-term degradation of the amalgam/Amalgambond interface over time.

MUSC

Yes, we still teach pins and do a fair number of them in the clinic. With both amalgam and composite. We have never used Amalgambond.

U of PR - Yes

NOVA -YES. We provide didactic information through lectures on pins, but don't use them.

15) Liners, Bases, and Cements. Which ones are being used for what purposes?

MMC - Liners: Bases: Dycal Cements: FujiCem 2

VCU

We follow the guidelines as listed in Sturdevant's 6th edition regarding application of liners and bases, with the exception that we do teach covering CaOH with a GI/RMGI underneath composites. Currently, we use Dycal and Vitrebond brands of liners and bases. For cements, please see answer to question #3 above.

UNC Liner:
RMGI (Vitrebond). When there is 1.5 mm or more of dentin remaining between depth of defect and pulp, desensitizer (Gluma) and liner are placed.

Base:

Glass Ionomer. When there is ≤ 1.0 mm of dentin remaining between depth of defect and pulp, desensitizer (Gluma) and liner are placed.

Cements:

Polycarboxylate, ZOE cement and non- eugenol formulations – provisional restorations RMGIC and ZnPO₄ – Metal restorations, metal ceramic restorations and Zr restorations Resin cements- All ceramic restorations, Veneers etc.

U of FL

Liner: Resin modified glass ionomer (Vitrebond/3M ESPE) and TheraCal (Bisco). They are used for protecting the pulp-dentin complex.

Base: Resin modified glass ionomer (Fuji II LC). It has been used as a dentin replacement, a physical barrier preventing bacterial penetration, and source of fluoride for dentin remineralization.

Cements: Resin modified glass ionomer: Fuji I Plus is used to cement PFM crowns

Resin cements: Rely X Ultimate, Multilink Automix, used for cementing indirect and/or simidirect restorations.

LECOM

Glass Ionomers: (GC Liner) for sandwich techniques and where small amount of dentin must be replaced and where additional FI is recommended. All CaOH and ZOE is covered with GI before bonding. GI are used to seal GP after obturation and seal the access opening

G R U

Ultranblend as stand-alone liner for deep preps OR Dycal (under resin) or Dycal & Vitrebond under amalgam are most commonly used liners.

UK

GI and RMGI used over CaOH for pulp-capping and for base. Glumma used under shallow amalgam.

U of L

We rarely place bases at the dental school. We utilized calcium hydroxide for irritation and reparative dentin formation as DPC or IPC. Our work horse for lining cavity preparations is a resin modified glass ionomer in both moderate to deep preparations.

MU SC

Liners, bases: Vitrabond and Fuji IX

Cements: Rely-X Luting, Rely-X Unicem, Nexus 3.

U of PR-

CaOH, Varnish, Glassionomer Hybrids for bases and cements and Resin base, cements for PFM and Ceramic.

NOVA - For Bases and Liner we use RMGI such as Fuji lining, Fuji IX, Vitrabond

III. Student/Program Assessment

1) Are faculty or students evaluated or rewarded based on clinical production at your school? Do you think this is a valid method of assessment? Why? Why not?

MMC - No

V
C
U

Part of the Clinical General Practice Dentistry grade is based on production. VIP (Variable Incentive Pay) for faculty is based on profits from the clinic, so if production is not occurring in the groups, it can affect VIP.

U
N
C

Students are not rewarded based on clinical production. There is some amount of profit sharing that happens at faculty level.

U of FL

We have a patient-centered comprehensive care program and want to promote case completion of all assigned patients. However, we have a competency-based curriculum that has the potential to drive students to complete only the necessary competency assessments. Therefore, the student's semester grade is dependent upon the number of RVUs they accumulate in a semester. This ensures that students complete the comprehensive care on each of their assigned patients, remain active in our discipline, and continue to learn from each clinical experience. Furthermore, it teaches the student to start thinking about production and how it influences them once they graduate.

Faculty practice participants receive a supplement based on their individual collection report. This is not a method of assessment but definitely benefits each practitioner financially based on their activity in the practice.

LECOM

I feel that rewarding faculty/students on productivity undermines ethical dental training. Instead of learning and teaching, production becomes the benchmark of success with no regard to quality or proficiency. This is the issue with corporate dentistry- "productadontists" are not good for dentistry.

G
R
U

Students are "rewarded" since their Junior Restorative Clinic grade is, in part, based on productivity. Direct restorations are given value points & students must achieve a specific total for a grade. 140+=A, 12-139=B, 80-119=C, <80=F This is 15% of the clinical course grade

The number of direct restorations as part of the RVU points are counted 50+=A, 45-49=B, 40- 44=C, under 40=F; this is 10% of the course grade

Crowns or other Indirect Units- 6=A, 5=B, 4=C 25% of the grade

3 clinical operative competencies (Class I or V, CI II, and CI III or IV) 30% Faculty Subjective

Evals and Daily Grading= 20% of the grade

UK - Not that I know of. Students are indirectly rewarded with fourth year awards.

U
of
L

Our students are currently being evaluated on clinical experiences, not productivity. Same is true for faculty. Students perform foundational minimal clinical experiences in preparation for summative competency examinations. We currently do not employ a portfolio evaluation for each individual student or faculty.

MU
SC

No, what a terrible idea! Such a system would foster dentistry as a money making venture, not a health profession

U of PR - No. As bonus points.

NOVA – No

2) What needs to be done to ensure “operative dentistry” maintains an identity as its own discipline? What should be included in its identity? Should it retain its own identity? Why? Why not?

MMC

In academia each discipline needs to maintain its own identity to ensure students understand the fundamentals of tooth conservation (as a lesion increases in size so will the restoration). Operative Dentistry provides the foundation for restorative dentistry. Fixed prosthodontics uses the fundamentals, techniques and procedures taught in Operative Dentistry (Cariology> Class I > Class II > Inlays > Onlays) as the foundation for teaching restoring extensively damaged teeth.

V
C
U

I think it should retain its own identity, as it provides foundational principles upon which other disciplines are built, and can also be an end in itself (prevention only or direct restorations). It's a unique discipline as it blends in/is an integral part of so many other disciplines such as Cariology, Dental Materials, Fixed prosthodontics (core build-ups; onlays as alternatives to crowns).

U
N
C

A strong presence from AOD and CODE in the ADA. What should be included in its identity? Direct restorations, limited fixed prosthodontic procedures, esthetic restorations, caries management
Should it retain its own identity? Why? Why not?

Yes. Operative Dentistry procedures can be referred to as “the bread and butter” of a general dentistry practice. The primary procedures completed in any dental school at DDS 2nd year and DDS 3rd year levels are Operative Dentistry procedures, and yet there is a general lack of understanding among the public as to what Operative Dentistry stands for.

U of FL

In order to ensure that “operative dentistry” maintains an identity as its own discipline, it should continue to strive for excellence teaching evidence-based operative procedures, always focusing in preserving sound tooth structure despite performing a restorative procedure.

Operative Dentistry procedures which should be included in its identity would be very wide ranged such as: caries risk and management, resin infiltration procedures, minimally invasive restorations, conventional restorations, and esthetic restorations including diastema closures, class IV restorations, and high technology cad-cam restorations.

Yes, it should maintain its own identity, because the treatment philosophies in Operative Dentistry are very particular and progressive within dentistry itself.

LECOM

I think this is a no brainer-Operative Dentistry is the foundation for all other clinical procedures (C/B, endo etc.)

G
R
U

See the editorial from Operative Dentistry, 2011, 36-6, 567-571 for one perspective about this discipline.

UK

Operative dentistry will always have its own identity as long as we continue to teach the comprehensive care model.

U
of
L

Daily Operative Dentistry at our institution has been incorporated into comprehensive care clinics. Summative competency assessments are performed in block nature. The key to integration is providing adequate calibration training for faculty grading both daily formative and competency summative assessments. Operative dentistry is a part of comprehensive care model providing patient-based care.

MUSC

I wish I knew because it is not here at MUSC. The Operative Department vanished more than a decade ago to be replaced by an Operative Division. That vanished with the last directors retirement 5-6 years ago, and Operative is now part of the Restorative Division. But clinical teaching is still segregated: Operative versus Fixed Pros. The pre-clinical teaching is also still segregated. Very confusing.

U of PR-

By increasing participation in esthetic resins restorations, cariology, post and cores, single crowns, bleaching, inlays and onlays.

NOVA

The foundational knowledge in lecture and individual laboratory projects need to maintain their identity to develop competency in tooth preparation and placement of direct restoration.

3) Does your school still host a traditional clinical boards exam or is it considering moving away from the process towards a non-patient based exam? What alternatives are being considered?

School	Does school host traditional clinical boards exam	Considering moving toward non-patient	What alternatives are being considered
MMC	YES	Not at the moment	
VCU	YES	Not at the moment	
UNC	YES		
ECU			
U of FL	YES	Not at the moment	
LECOM	YES		Not aware
GRU	MOCK EXAMS		
UK	YES		
U of L	MOCK EXAMS	No at the moment	
MUSC	YES		
U of PR	YES		Simulation is used for fixed prosthodontics
NOVA	YES		the Buffalo model

4) Follow up on schools that use digital imaging for student project grading – how has this progressed? Has E4D Compare software or Sirona’s Prep Check been used more widely? Please provide thoughts on the future of computer-aided evaluation?

MMC – We currently do not use digital imaging for grading VCU -

We are in the planning stages at the moment.

UNC

We currently are not using E4D or PrepCheck, though we have collaborated with E4D to try and improve the quality of the imaging inside intracoronal preparations. Currently, to the best of our knowledge, E4D has not been able to satisfactorily capture the gingival aspects of posterior proximal preparations that converge occlusally.

U of FL

We have just purchased the E4D Planmeca Compare software and are just beginning to incorporate it into our preclinical teaching to help students with self-assessment as they practice outside of class hours. We are not currently using the software for grading. This is something that will be investigated for future use. We now have our simulation lab available to students with greatly expanded hours. As we know, "practice does not make perfect, perfect practice makes perfect."

LECOM - We do not use digital imaging for grading

G
R
U

We are not yet using scanners to grade D-1 operative practicals. The General Dentistry dept. is doing a pilot project using E4D to grade crown preparations.

UK - Just starting to try to use Compare software for waxing

U
of
L

We have just employed the E4D compare software to use in our pre-clinical fixed prosthodontics course. We hope to use this software to grade pre-clinical operative dentistry preparations in the near future. The objective evaluation is certainly nice for calibrated assessment but concerns of limited faculty calibration is concerning.

MU
SC

I have not used it but those that have like it, and it seems to be expanding. The E4D Compare is the most used. It is used in Dental Anatomy and extensively in Fixed pros.

U of PR- N/A. We are trying 3 Shape system, but still in the consult stage for buying an equipment.

NO
VA

We have the students image their preparations in the clinic directly in the mouth and teaching digital imaging for their tyodont preparations in the Fixed Prosthodontics D2 course. We are not using the E4D Compare software or Sirona's Prep Check.

5) What student assessments (performance/competency examinations) are required? Who grades/evaluates the performance exam? Are their multiple assessments or a "one and done" approach? Please provide rationale for the choices.

M
M
C

Students are assessed throughout their matriculation on procedures that are designed to increase in difficulty. Students complete a self-assessment exercise prior to their faculty evaluation.

D1 and D2 perform all simple and complex operative procedures on simulated patients, using carious and non-carious teeth. Pre-clinical practical examinations are used to assess the understanding of fundamental principles.

D3 students are required to complete live patient and simulated patient exercises and 2 clinical competency exams on carious teeth (1 Class II Amalgam and 1 Class II Composite) before matriculating to the D4 year.

D4 students are required to complete live patient and simulated patient exercises, 2 final clinical competency examinations (1 Class II Amalgam and 1 Class II Composite) and a mock licensing examination before graduation.

V
C
U

For the Dept. of General Practice Dentistry, D3s are required to do 3 clinical competencies: a Class II Amalgam, Class II Composite and Class III Composite. D4s are required to do 3 clinical competencies: a Class IV Composite, an amalgam or composite Cuspal Coverage restoration and treatment-planning. Full-time faculty and designated adjunct faculty appointed by the Group Leaders grade/evaluate. There can be multiple assessments if one fails the competency. The gateway that permits a student to challenge an operative competency is an accumulated 150 points as well as passing the Mini-Mock Board.

In regards to Fixed prosth., competencies (4) during the D3 year are mannequin-based. Starting next year there will be a clinical 4th-year fixed prosth. competency administered by Prosthodontics Dept.

Currently there is an OSCE that includes competency testing for Removable Pros. Dental implants will be part of that competency this year.

For the Dept. of Endodontics, there is one competency exam the D4 year: a patient treatment competency, where basically a student has to do a root canal from start to finish without assistance.

UNC

EVALUATIONS

DDS 1 Conservative Operative Dentistry Course:

Written evaluations: Three exams. To pass the course, a student must have at least a 70/100 average on the written evaluations.

Preclinical laboratory evaluations: Four practical evaluations. To pass the course, a student must have at least a 70/100.

DDS 1-2 Competency: Gateway exam between years 1 & 2 of DDS training. This exam tests a student's Operative Dentistry skills to demonstrate that they are "safe beginners" as they start performing clinical operative dentistry procedures.

Clinical competency procedures that are accomplished at DDS 2, DDS 3 levels:

These are independent restorative procedures that must be accomplished with minimal faculty intervention.

1. A Class II amalgam or Class II posterior composite preparation and restoration, and
2. A Class III/ Class IV composite preparation and restoration.

Rationale:

The competent student in Operative Dentistry will, with consistency and confidence, demonstrate the ability to:

- Reconcile the restorative treatment plan with appropriate medical, dental, and socioeconomic information.
- Support anticipated Operative Dentistry procedures with knowledge and skills from related disciplines.
- Communicate clearly with the patient and colleagues about the patient's dental health and proposed restorative treatment.
- Prepare and restore teeth according to appropriate mechanical, biological, and esthetic considerations.
- Recognize personal technical limitations and react accordingly by seeking appropriate consultation and/or referral.
- React rationally to unexpected developments.
- Exercise empathy and respect in all relations with patients and colleagues

U of FL

From semester 6-8 (junior year), students are expected to successfully complete five Level I Skills Assessments to evaluate clinical progress. These assessments are both formative and summative in nature and are similar to the six Level II Skills Assessments (competency assessments) given in semesters 9-11 (senior year). Level I Skills Assessments are designed to prepare students to challenge Level II Skills Assessments in their senior year.

The Level I assessment not only evaluate a student's psychomotor ability but will also evaluate the student's ability to select appropriate cases, manage patients, and make evidence-based decisions while providing dental treatment with limited faculty intervention. Students are encouraged to interact with faculty and engage in discussions about the treatment they are providing. Asking for a faculty members opinion is acceptable as long as the student first provides a rational evidence-based decision or dilemma. Skills Assessments are not intended to mimic normal daily clinic sessions. They are examinations of the student's abilities as described above. Level II assessments evaluate the same in addition to the student's ability to operate independently while providing dental treatment without faculty intervention.

Students select procedures to challenge for Skills Assessments that are compatible with the needs of their family of patients from the list below. Once all Level I Skills Assessments have been successfully completed, students can begin challenging Level II Skills Assessments for competency. Students must have completed a minimum of one clinical case of the same classification before challenging an assessment. It is strongly recommended that the student achieve adequate clinical experience with that specific classification prior to challenging the assessment. Students are expected to show faculty (in axiUm) that at least one of that same procedure was completed in the clinic before every Level I Skills Assessment.

All skills assessments are graded by two operative faculty members (if there are not two operative faculty members available on a given day in the clinic, the comprehensive clinic team leader can serve as the second grader).

The five junior level skills assessments are caries risk and management, class II, class III, class IV and class V. The senior level skills assessments for competency include all of the junior level and a complex class II preparation and restoration.

LECOM

We have student perform practical and preclinical competencies before advancing into the clinic. If there is a failure- remediation is attempted until the student shows competency. The evaluations are performed by preclinical faculty. Clinical competencies are performed by the individual preceptors in the clinic.

GRU

Pre-clinical practicals are graded anonymously by a team of 4 faculty. The grading sessions are 1-1.5 days long & start with a 1 hr calibration exercise. Clinical competencies are graded by 2 faculty, At least 1 must always be full-time (Class I or V). The Class II and Class III are always graded by full-time.

UK

Students are assessed with preclinical and clinical competencies anonymously graded by multiple faculty. It is generally considered that one and done is not a realistic assessment of competency.

U of L

For direct restorative dentistry, D3 students are expected to complete 10 minimal clinical experiences using both amalgam and resin composite. These daily assessments are graded by calibrated faculty providing clinical coverage. D3 students are expected to complete two operative competency examinations: class II and class III graded by block calibrated faculty. D4 students are expected to complete three operative competency examinations: 2 class II's and one class III graded by block calibrated faculty.

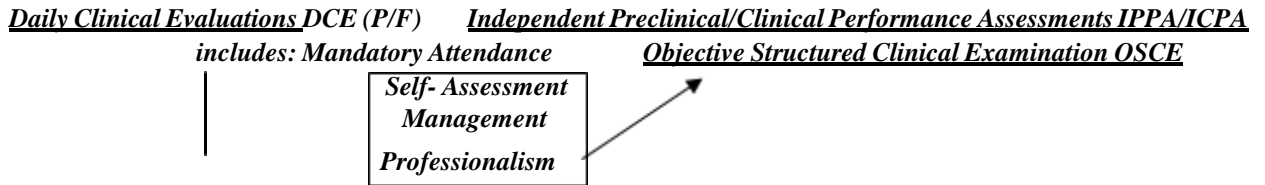
MU SC

Rising Juniors take a pre-Clinical Competency exam before they can start in clinics. Juniors take the Technical Assessment I at the end of the Junior year and seniors take the Technical Assessment II in December. These evaluate Operative, Fixed and Removable Pros and Endodontics. These are laboratory exams without live patients. Senior faculty from each discipline grade the portions done in their sections. All three of these are actual numbered courses and must be passed.

U of PR

Yes. There are promotion exam for D3 students and competency clinical exam for D4 students. Each sections coordinate these exams and two evaluators grade them.

COMPETENCY ASSESSMENTS- Department of Cariology and Restorative Dentistry



Daily Clinical Evaluations IPPA's/ICPA's/OSCE

Summer D-3	<u>RVU's</u>	<u>O- IPPAs or ICPAs</u>
Benchmark	0	Can take Fall D-3 IPPAs)
	Data Collection Treatment Planning	

Fall D-3		<u>2- Dentoform IPPAs:</u>
Benchmark	10 RVU's	Class III Composite Preparation and Restoration Class II Amalgam Preparation and Restoration

Winter D-3		<u>1- ICPA on a Patient</u>
Benchmark	35 RVU's total	Class II Composite or Amalgam Preparation & Restoration

Summer D-4	<u>RVU's</u>	<u>O- IPPAs and ICPAs</u>
Benchmark	45 RVU's total	

Fall D-4		<u>2- ICPAs on Patients:</u>
Benchmark	70 RVU's total	Class III Composite Preparation and Restoration Class II Composite or Amalgam Preparation and Restoration
		1 Treatment Planning OSCE

Winter D-4		<u>1 COMPLEX ICPA on Patient:</u>
Benchmark	90 RVU's total	3 or more surfaces, Preparation and Restoration, anterior or posterior, composite or amalgam (ncluding core-buildup) e.g. MOD+, Diastema Closure, Class IV, Class III- 3+ surfaces, r quadrant with minimum of 1 interproximal restoration

- To challenge the D-3 ICPA, a student should have a minimum of **20 RVUs**
- To challenge the first D-4 ICPA a student should have a minimum of **35 RVUs**
- To challenge the second D-4 ICPA, a student should have a minimum of **50 RVUs**
- To challenge the third D-4 ICPA, a student should have a minimum of **70 RVUs**.

Team Leaders determines a students' readiness to challenge an individual ICPA. Clinic faculty evaluate daily procedures and standardized restorative graders evaluate the ICPAs.

Prosthodontics: There is a preapproval process and form for readiness to complete the ICPAs. Once approved they are all one and done. These are the competencies due to the fact that all general dentists should be able to complete these procedures in general practice:







- 1). Crown ICPA
- 2). Implant Crown ICPA

- 3). RPD ICPA
- 4). Max/Mand Complete Denture ICPA
- 5). An OSCE for Prosthodontics heavily removable based
- 6). Two Portfolios: One for Cosmetics Case and one for a Complex Case 7). Implant retained mandibular overdenture ICPA
- 8). Five Prosthodontic Patients Completed (Start to Finish).
- 9) Prosthodontics faculty and Team Leaders grade the assessments.

**CONSORTIUM OF OPERATIVE DENTISTRY EDUCATORS
SOUTHEASTERN REGION MEETING
OCTOBER 7-9, 2015**

**MEHARRY MEDICAL COLLEGE
DEPARTMENT OF RESTORATIVE DENTISTRY**

REGIONAL CODE AGENDA

	VCU and NOVA and ECU		U of L		LE
			U		GRU

MEHARRY MEDICAL COLLEGE (MMC)
VIRGINIA COMMONWEALTH UNIVERSITY (VCU)
UNIVERSITY OF NORTH CAROLINA (UNC)
UNIVERSITY OF LOUISVILLE (Uof L)
UNIVERSITY OF FLORIDA (Uof FL)
LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE (LECOM)
GEORGIA REGENTS UNIVERSITY (GRU)
NOVA SOUTHERN UNIVERSITY (NOVA)
UNIVERSITY OF KENTUCKY (UK)
MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)
UNIVERSITY OF PUERTO RICO (Uof PR)
UNIVERSITY OF ALABAMA (UAB)
EASTERN CAROLINA UNIVERSITY (ECU)

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

MEHARRY MEDICAL COLLEGE ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VLSCHOOLS:

V
C
U
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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *We still teach pins in pre-clinical operative lecture and laboratory and use them occasionally in clinic. Amalgam is used in the clinic especially on molar teeth, but use of composite is increasing on premolar dentition.*
2. What matrix system are they using for class II resins? *Tofflemire with metal band and Garrison system when available*
3. What finishing and polishing kits for resins are they using? *Brasseler composite finishing burs, Shofu polishing points, and Schein Glossy polishing paste*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *Limited use*
5. Has anyone moved over to single-use burs? *No*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *Axiom self-assessment sheet prior to evaluators grade sheet.*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *Some faculty have converted their courses to a more online-type format and also incorporated the use of Audience Response Devices ("clickers") have been incorporated by some instructors. I suspect this could be due to enhanced teaching practices and perhaps a direct response to the learning styles of millennials.*

U
K
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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs?
Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *We have some standardized patients in the DentSim curriculum but not utilized.*

LEC
OM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? *We are currently using Dycal and Limelite in the pre-doctoral clinics. Septodont's Biotene is available for pulp-capping in the Operative Clinic and Endodontic Clinics. Both Dycal and MTA are taught didactically.*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? *In the pre-clinical laboratories we have practical laboratory exams. In the clinical operative competencies we have 6 individuals who are our graders. They are full-time faculty and are GPs. Many of those who will grade the competencies teach in the pre-clinical operative laboratories and are already familiar with the guidelines. How many faculty are permitted to grade competency exams? Two per competency with a third available if one faculty deems a failure is indicated. Are examinations blinded? Yes*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentofrom simulated exercises? *The mock dental board has no live patients.*

Meh
arry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *No. We only order from our Schein Dental Supply Store. No gray product is sold through Henry Schein.*
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]
There is an inconsistency in documentation of name brand of product. Lot numbers are not currently included. For implants manufacturer and lot number is included.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

VIRGINIA COMMONWEALTH UNIVERSITY ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

V
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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *We still teach pins in pre-clinical operative lecture and laboratory and use them occasionally in clinic. In general, we still use amalgam frequently in clinic, but use composite more often.*
2. What matrix system are they using for class II resins? *TrioDent*
3. What finishing and polishing kits for resins are they using? *Enhance system, Sof-lex discs, Brasseler composite finishing and polishing kit that contains finishing burs, bristle brushes and rubber cups, tips etc.*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *N/A*
5. Has anyone moved over to single-use burs? *We have not.*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *No.*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *Some faculty have converted their courses to a more online-type format and also incorporated the use of Audience Response Devices ("clickers"). I suspect this could be due to enhanced teaching practices and perhaps a direct response to the learning styles of millennials.*

U
K
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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.), and do they include radiographs?

Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *We do have some standardized patients in the DentSim curriculum.*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? *We are currently using Dycal in the pre-doctoral clinics, but both Dycal and MTA is taught didactically.*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? *In the pre-clinical laboratories, we have practical laboratory exams. My answer will focus on our clinical operative competencies: Our graders are General Practice (G.P.) department full-time and some part-time faculty; they are updated periodically on how operative preparations and restorations are taught at our school. Additionally, many of those who will grade the competencies teach in the pre-clinical operative laboratories and are already familiar with the guidelines. How many faculty are permitted to grade competency exams? One per competency. Are examinations blinded? No.*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? *We use dentoform simulated exercises for our Mock Board operative and fixed prosth. Mock Boards*

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *No. We only order from our Schein Dental Supply Store. No gray product is sold through Henry Schein.*
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *To my knowledge we include the brand name for most materials (i.e. Consepsis, Optibond Solo Plus, etc. for which one could look up the manufacturer) but not lot #. For implants, a form in axiUm is utilized that contains information such as manufacturer and lot number. Sometimes this information is found in the progress notes.*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF NORTH CAROLINA ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

V
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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general.

UNC – We teach the use of 0.021-inch self-threading pins when the overall-vertical loss of cuspal tooth structure is ≥ 4 mm.^{1,2} Horizontal slot preparations at tooth line angles are preferred in situations when the loss of vertical height is < 4 mm.

UNC - Amalgam is indicated when isolation cannot be obtained. Furthermore, amalgam may generally out-perform composite resin restorations in posterior teeth and is even preferred in high-caries risk patients.³⁻⁶

- 1) *Pameijer CH, Stallard RE: Effect of self-threading pins, J Am Dent Assoc 85:895-899, 1972.*
- 2) *Dilts WE, Welk DA, Laswell HR, et al: Crazeing of tooth structure associated with placement of pins for amalgam restorations, J Am Dent Assoc 81:387-391, 1970.*
- 3) *Rho Y-J, Namgung C, Jin B-H, et al: Longevity of Direct Restorations in Stress-Bearing Posterior Cavities: A Restrospective Study, Oper Dent 38-5, 2013.*
- 4) *Bernando M, Henrique L, Martin MD, et al: Survival and reasons for failure of amalgam versus composite posterior restorations placed in a randomized clinical trial, J Am Dent Assoc 138:775-783, 2007*
- 5) *Opdam NJM, Bronkhorst EM, Loomans BAC, et al: 12-year Survival of Composite vs. Amalgam Restorations, J Dent Res 89(10):1063-1067, 2010.*
- 6) *Rasines Alcaraz MG, Veitz-Keenan A, et al: Direct composite resin fillings versus amalgam fillings for permanent or adult posterior teeth (Review), The Cochrane Library Issue 3, 2014.*

2. What matrix system are they using for class II resins?

UNC - Trident V3 Section Matrix System (same as the Palodent Plus), Also use the Garrison Composi-Tight 3D.

3. What finishing and polishing kits for resins are they using?

UNC – Finishing: 12 fluted carbides, Sof-lex Discs. Polishing: ET Illustra, Jiffy Points, Soflex Discs

4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years.

UNC – Still under exploration with recognition that current student exposure is inadequate

5. Has anyone moved over to single-use burs?
UNC – Sterilization (including bur blocks) is all centralized. Burs are replaced as needed with new burs

UF

CD6.

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- Are the students using any kind of new technology to self-assess their work?
UNC – Our focus has been to establish regular self-assessment prior to faculty assessment and this currently remains via the use of paper and ink. We have a recognized need to automate the whole process for efficiency and internal faculty calibration purposes.

We have designed, tested and published the use of an online computer training module to teach the use of the periodontal probe for the purposes of measuring preparation dimensions, clearances.¹ Data from multiple years of use is in manuscript form and will be submitted for publication soon.

*Ahmed SN, Kowlowitz V, **Boushell LW**. Didactic and Computer-Based Interactive Training Module Improves Precise Preclinical Use of the Periodontal Probe. ADEA 2013 Abstract No. 25.*

7. Have you changed or added new teaching methods for millennial students in the past 3 years?
UNC – Millennials look at faculty as guides, facilitators and coaches (J.B. McGee, MD, medschool.pitt.edu). Our focus has been on a greater level of agreement (calibration) among ever changing faculty and TAs (guides, facilitators, coaches) as a priority over the addition of new teaching methods. (The basics of operative dentistry theory and skill set development still have to be established). We have plenty of room for improvement!

U

K

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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?

UNC – We do not use AXIUM and a new EPR is under design

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option?
UNC – For teeth that are vital, asymptomatic (or at worst have a reversible pulpitis) and have a healthy periapical area: Currently UNC Endodontics teach MTA-ANGELUS (sets in 10-15 mins) for direct pulp caps followed by a direct restoration. Operative Dentistry still teaches use of a hard-setting CaOH₂ paste followed by complete coverage with a RMGI (this is essential to seal/protect the CaOH₂) for both direct and indirect pulp caps (indirect = if the remaining dentin is determined to be , 0.5 mm thick).¹ Hemorrhage control is essential if pulp

tissue is exposed.

Swift EJ, Trope M, Ritter AV. Vital pulp therapy for the mature tooth – can it work?. *Endo Topics* 5:49-56, 2003

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded?

UNC – Preclinical: We use exactly the same teaching rubrics for both formative and summative student feedback. Each rubric divides the preparation or restoration into specific dimensions. Performance levels of each dimension are described and scaled as Ideal, Acceptable, Requires Correction or Unacceptable. Hand Instruments that are used for various operative dentistry procedures (Periodontal probe, enamel hatchet, amalgam condensers) with precise dimensions (i.e. 1 mm, 1.5 mm, 2.0 mm) are used to assess clearances, depths, widths so that grader subjectivity is limited. Video and .pptx presentations are used to demonstrate proper use of various assessment tools.

Currently we seek to have 1 teaching team per 20 dental students. The teaching team is made up of 1 faculty, 1 TA and 1 DDS4 student.

Preclinical practical exams are graded by faculty and TAs in a blinded fashion where 1 grader will assess 1-2 aspects of each preparation (or restoration) of all students. The student's grade is a sum total determined by their ability to accomplish each dimension of the preparation or restoration.

UNC – Clinical: Only full-time Faculty and TAs (Residents in the Advanced Education in Operative Dentistry) program are authorized to grade clinical competencies. Competency assessments require students to self-assess. Only Failure Criteria are listed and are to be considered when assigning a grade. The objective of the clinical competency is to determine achievement of a minimum level of clinical acceptability. Only the supervising faculty/TA assesses the student treatment. The process is much more subjective and is not blinded. However, our Mock Board is completely blinded.

11. How many schools are using live patient examinations for "mock dental board" examinations versus dentiform simulated exercises?

UNC – we are using live-patients for our mock boards...though we are wrestling with the ethics of the preparation of "board lesions" in light of new re-mineralization treatment approaches.

Simulated caries in dentiform exercises for examination purposes may not be recommended (depending on the manufacturer of the dentiform teeth with simulated caries)¹

Delgado AJ, Walter R, Boushell LW. Are all dentiform teeth with simulated caries the same? A 6 years retrospective study in preclinical operative dentistry. J Dent Edu Accepted for November Publication 2015.

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.]
What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school?

UNC – Our dental materials committee seeks to purchase all materials we use from primary manufacturers at university educational rates.

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]

UNC – Currently the name, lot # and expiration date of all implant related materials (site preservation graft materials, implants etc) are included in the treatment progress note.

For operative procedures are students are taught to use the Trade name of the materials used in the procedure (e.g.the adhesive system they are using “Clearfil SE Bond” , the impression material used “Aquasil”). However, we are currently not tracking expiration dates or lot numbers. If each bottle or tube had a bar code or grid that could be scanned/incorporated as part of a progress note, tracking might be possible. This level of data acquisition might also help support clinical research.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF LOUISVILLE ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *We still teach and use pin retention for amalgam core restorations. We still place approximately 50% amalgam restorations based on caries risk.*
2. What matrix system are they using for class II resins? *Garrison and Garrison 3D posterior ring system.*
3. What finishing and polishing kits for resins are they using? *Soft-Flex polishing system.*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *We are currently implementing E4D compare software into our pre-clinical curriculum.*
5. Has anyone moved over to single-use burs? *Not at this time.*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *We are currently implementing E4D compare software into our pre-clinical curriculum.*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *Yes, we use active learning through engaging pedagogy in the pre-clinical didactic classrooms.*

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K
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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *We currently use axiUm in our pre-clinical courses but do not have standardized patients. Students practice with fictitious patients learning medical history questioning, progress note writing and odontogram entry.*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option?
We are currently pulp capping with calcium hydroxide.

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded?
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises?

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *We currently have a dental materials management committee to oversee the evidenced-based implementation of dental materials used in the clinics.*
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *Students' document the manufacturer and brand of dental materials used for direct restorative dentistry. We do not document the lot #. AxiUm search of the tooth number will take you to the procedure.*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF FLORIDA ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general.
We present it in didactic courses, but we are not implementing it in clinics. Instead, we do amalgam pins or retention features. The use of amalgam is fading away, but the replacement and repair of composite restorations is increasing significantly at the same time.
2. What matrix system are they using for class II resins?
We use the Composi-tight system from Garrison in clinic and preclinic.
3. What finishing and polishing kits for resins are they using?
For finishing we use fine and extrafine diamond and carbide burs and Sof-Lex discs and strips. For polishing we use the Sof-Lex disc system and Ultradent Jiffy points and Jiffy brushes.
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years.
We just implemented the Compare Software (E4D) this year in Dental Anatomy.
5. Has anyone moved over to single-use burs?
We do not use single use burs.

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6. Are the students using any kind of new technology to self-assess their work?
We have just begun to use the E4D Compare software and we use an iRubric for self-assessment.
7. Have you changed or added new teaching methods for millennial students in the past 3 years?
Last semester in our Operative II course we started giving shorter lectures, 30 minutes instead of 50 minutes, and added more clinical thinking/case-based exercises and educational videos. Classroom instruction is much more interactive as compared to the past.

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- K 8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?

We do all of this in our treatment planning course. Students work in groups and use different electronic patients to interpret radiographic findings, record findings, plan treatment, request consultations, record treatment, and complete progress note entries.

We are axiUm users. Instruments are delivered to the clinic based on the planned appointment in axiUm.

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option?

We are using Theracal in clinic for direct pulp capping. In didactic lectures information about calcium hydroxide and MTA is presented.

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded?

We meet monthly and discuss competency in divisions meetings, and 2 graders independently assess the competency and then meet to discuss the final assessment.

11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises?

UF is using live patients for mock boards in periodontics and operative dentistry.

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school?

We do not use gray materials; we only used products that are accepted by the FDA.

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]

We document the product and brand of the material placed in the mouth.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

LAKE ERIE COLLEGE OF OSTEOPATHIC MEDICINE ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *We do not teach pins at LECOM*
2. What matrix system are they using for class II resins? *Palodent Plus*
3. What finishing and polishing kits for resins are they using?
Finishing- a specific LECOM kit composed of course and fine carbide finishing burs.
Polishing CA-Composite polishing kit (We may change to Pogo next year.)
Supersnap rainbow kit
Jiffy brushes
Composite polishing paste
Optiguard composite sealer
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *We have a 2day demo with CAD-CAM in D2. We are considering adding it at a later date.*
5. Has anyone moved over to single-use burs? *The clinic has been investigating this, and I think the change will be coming soon.*

UFCD:

6. Are the students using any kind of new technology to self-assess their work?
Nothing new
7. Have you changed or added new teaching methods for millennial students in the past 3 years?
School is in 4th year-nothing new yet

UK:

8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? *At LECOM sim lab: we use standardized patients for operative (also end, C/B, denture- we have a new RPD professor who hasn't used one yet. Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs?*
We have students do (With the standardized patient):
 1. *Medical Hx*

2. *Information from the patient profile)*

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3. *Treatment plan-phased and sequenced with problems and diagnosis*
4. *SOAP note for initial exam. Using out LECOM template*
5. *Progress notes for each procedure*
6. *Radiographs are only used for endo*

Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *Not sure what this question is asking*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option?

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? *We have a grading rubric that we all try to follow. This is always a touchy area due to faculty differences and biases*
 How many faculty are permitted to grade competency exams? *Usually entire sim faculty (4-5 of us) will grade (We each do 20-26 out of a hundred)* Are examinations blinded? *Absolutely. Students are given a 3 digit number on 3 stickers. One sticker goes on typodont, 1 on evaluation sheet and 1 they keep as a "claim Ticket"*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises?
We only administer the ADEX manikin portion at LECOM (Endo and C/B). The part 2 patient portion is to be done at an outreach clinic. They are doing their first part 2 later this year when the students complete their competencies.
Our mock board protocol:
 1. *We start this year with a 5 part "prep course" for our D3s . This started in mid Sept and will carry on until December. We have 25 students at a time (with 5 faculty) spend 5-2hr session s practicing for the boards. We have a faculty member who just became a floor evaluator and she is leading this tutorial program (Results to follow)*
 2. *The student must complete the tutorial program before they take the mock boards.*
 3. *They take a mock board the end of Dec. and a chance for remediation in Jan.*
 4. *The dean will only give a recommendation for the student to sit for the ADEX if they pass the mock board (at least that is the projected policy). This not telling the student that we think he/she can pass the ADEX-only that we feel that they are "competent" enough to attempt the exam.*

Meharry:

12. Does your school use gray materials from secondary markets? *No.* [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *Some student (and clinical faculty) try to bring "gray" instruments and products into the sim (especially if they have a relative who is a*

dentist). We have a firm policy that only items on our established formulary can be used in the sim

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *Great question. Once again, I am not in the clinic, but we teach our students to record in their progress notes the name brand of each and every product/ item used on a patient. For example: GS-80 admixed amalgam, Beautibond 7th generation bonding system, Dycal CAO_H, Affinis PVS etc. The dispensing director keeps track of all the lot numbers of products used at the school (the list is kept at each dispensing station).*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants

GEORGIA REGENTS UNIVERSITY ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? *Rarely, but they are still available and the technique is still taught in pre-clinic.*

Comment on your clinic's use of amalgam in general. *Declining- The Class of 2012: 24% of all direct restorations done in 3rd & 4th year was amalgam; Class of 2015- 15% amalgam.*

2. What matrix system are they using for class II resins? *Circumferential- Tofflemire retainer and HO metal matrix band. Sectional- Garrison and Triodent*
3. What finishing and polishing kits for resins are they using? *Enhance, Sof-lex, Komet*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *Question reformatted by Dr. Baechle- **What is your school's experience in using CAD/CAM for Operative educational purposes? How have you used it successfully and incorporated it into the D1-2 years?** CAD/CAM is included as one method of fabricating indirect restorations in an Inlay/Only lecture during the Freshman year Operative Dentistry Course (no hands-on or demo). CAD/CAM is presented again in the Fall Semester of the Junior year in an Esthetic Dentistry Lecture/Lab Course and an Advanced Prosthodontics Lecture/Lab Course by lecture and hands-on demonstration exercises. CAD/CAM onlays or crowns can be performed in the junior and senior clinics for indirect restoration credit. Every student must do at least one unit as a clinical requirement for graduation.*
5. Has anyone moved over to single-use burs? *GRU- No*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *Not at this time*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *No, our answers from the 2012 National Agenda on this topic are still valid.*

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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? *Limited but increasing- Treatment Planning Course.*

Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs?

Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *When students make appointments on AxiUm, the type of appointment they sign up for initiates a request for the appropriate type of instruments, handpieces, etc. to be sent to the dispensary for distribution to the students on the day of their appointment.*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? *Not in restorative. Are the students in the clinical setting using these two products? MTA is available in the Endo clinic.*

If you are, are you still teaching calcium hydroxide as a viable option? *Yes- Calcium Hydroxide either as Dycal (less often) or VLC CaOH like Ultrablend (much more often).*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? *Yes for pre-clinical courses. No for clinical courses. How many faculty are permitted to grade competency exams? Most of them in accordance with their teaching assignments each semester. Are examinations blinded? Pre-clinic- yes. Routine Jr. & Sr. Clinic- no. Senior Mock Boards- yes*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? *Yes- patients for Operative & Perio.*

Meharry:

12. Does your school use gray materials from secondary markets? *No*

[Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *None other than vigilance in our clinics. Faculty are aware of our relatively limited scope of materials and should recognize un-authorized brands.*

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? *Restorative product names are often included- such as- Premise composite, Optibond FL adhesive, Ultrablend liner, RelyX cement, but not the Manufacturer, or Lot #.*
Information on implants and other surgically implanted materials are usually included in the patient's charts including Manufacturer, Brand, and Lot.

Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *Not at this time.*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants

NOVA SOUTHERN UNIVERSITY ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? *NSU is not using pins in clinic, but provide didactic lectures in the use of pins.*

Comment on your clinic's use of amalgam in general. *Currently less than 5 % of our restorations are done with amalgam (e.g lesions ending on cementum, difficulty with field isolation*

2. What matrix system are they using for class II resins? *Triodent sectional matrix system*
3. What finishing and polishing kits for resins are they using? *Brasseler fluted carbides, Sof-lex Discs, Enhance finishers and Jiffy polishers.*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *Not using for operative (direct restorative dentistry) currently, but Prosthodontics uses it for indirect restorations including inlays and onlays.*
5. Has anyone moved over to single-use burs? *Yes for crown preps*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *We use grading rubrics and have the technology to use CAD-CAM for grading in the future.*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *D-1 Integrated Restorative Dental Sciences I,II,III, D-2- CPD, D-4 Treatment Planning OSCE, (Removable Prosthodontics OSCE and Portfolio for Pros), use of course Blackboard, Sim-lab Demos using overhead projector*

U
K:

8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? *We have standardized test cases in axiUm. Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Yes, all of the above.*
Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists? *N/A*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? *MTA is used for direct pulp capping; Light cured calcium hydroxide is used for indirect pulp capping procedures.*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded? *Faculty are calibrated by participating in the operative/ IRDS courses. Sim-lab operative competency examinations are double blinded and each project is graded by at least 2 faculty. The faculty teach in the operative/IRDS courses and course director/content expert calibrates the grading team at the beginning of each grading session. Clinically, only veteran faculty in the operative/IRDS courses are competency examiners. (Optimally we use 2 graders/ student, but the competency is not blinded.)*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? *Patients are used for patient ICPAs, which in senior year are also treated as "mock boards." However, we do not teach to the boards and expect patient-centered care using principles of minimally invasive dentistry.*

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *NO*
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? *We include brand.* Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *Dispensing would keep track of the lot.*

Nova Southeastern University

14. Have you implemented ICDAS/ ICCMS into the clinic curriculum? *Didactic curriculum And in axiUm (ICDAS diagnostic codes are in axiUm)*
15. Do you have an integrated D-1 restorative dental science course? *Yes- dental anatomy, cariology, operative dentistry, occlusion, biomaterials and fixed prosthodontics.*
16. Do you consider the open sandwich technique as a treatment option for lesions ending on cementum in your pre-doctoral clinic? *Yes*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF KENTUCKY ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *Not much amalgam used. Pins taught but not used much*
2. What matrix system are they using for class II resins? *Garrison NiTi*
3. What finishing and polishing kits for resins are they using ? *Ultradent Jiffy Polishers, ortho debonding 30 fluted finishing burs*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *Plan to scan models rather than intraoral scanning*
5. Has anyone moved over to single-use burs? *not at UK*

UFCD:

6. Are the students using any kind of new technology to self-assess their work? *Not yet*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *Some flipped classroom use, Canvas is used for posting Ppts ahead of time so students come to class prepared to discuss. Some ECHO 360 utilized.*

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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? *CaOH covered by GI or RMGI*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded? *All exams are blinded. Number of faculty varies from 2-6 depending on complexity of exam. Calibration is done at the beginning of grading session and throughout as necessary. Course director has ultimate say when there are questions.*

11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? *We use live patients for most procedures. Endo is simulated*

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *No gray materials*

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]
Not enough documentation at this time. Only name of product used.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

MEDICAL UNIVERSITY OF SOUTH CAROLINA ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VLSCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general.

MUSC Yes, we still teach them and use a bunch in clinic.

2. What matrix system are they using for class II resins?

V3 matrix system

3. What finishing and polishing kits for resins are they using?

No kits. Sof-lex disks, Enhance, Pogo,

4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years.

The PlanScan systems are used in a semester long course dedicated to CAD/CAM where D2 students learn advanced concepts in digital dentistry. This special course focuses on design, materials and treatment considerations including inlays, onlays and full coverage. Before they get to this course, they are already experts in scanning and margin marking because of the PlanScan and Compare integration through the first year in dental morphology and Fixed Prosthodontics I. In addition, CEREC is also taught in the preclincs as well as 3 shape software and other scanning software.

This preclinical CAD/CAM course combined with integration of PlanScan in almost all preclinical courses ensures students are competent in scanning and designing. When students arrive to the clinics they are fully prepared to prep, scan, mill and deliver lithium disilicate restorations in a single 3hr appointment. Over the past 5 years students have done thousands of single visit lithium disilicate restorations with E4D, and the success has been incredible. The single visit CAD/CAM restoration is one of the few profitable restorations at the school, with most other restorations actually costing the school money. Furthermore, the ability to do more conservative partial coverage restorations has been extremely beneficial to our patients. Many students graduate with more deliveries of single visit CAD/CAM restorations than conventional with many students above 15 units and the class average is 10 units.

5. Has anyone moved over to single-use burs?

Not MUSC

UFCD:

6. Are the students using any kind of new technology to self-assess their work?

MUSC – no

7. Have you changed or added new teaching methods for millennial students in the past 3 years?
MUSC – No, not other than CAD/CAM

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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.) and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?

MUSC – we do not use axiUm pre-clinically. Instrument cassettes are pulled by the clinic assistants based on the next days schedule, and each cassette is assigned to a student by number. Students sign for them when they pick them up.

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option?

MUSC: no, we still use Pulp-dent paste overlaid with Vitrabond for direct exposures

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded?

MUSC – The only graders are the same two who grade all the pre-clinical practicals.

11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises?

MUSC – We use typodont-based exams only.

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school?

MUSC – nothing is permitted in the clinics that hasn't come through university purchasing from one of our vendors; Henry Schein, Brassler, Patterson, Ivoclar, Kerr, etc. We did have a problem with part-time instructors bringing their favorite material from their office into our clinics but we put a stop to that. Nothing is allowed in the clinic that students haven't already used in pre-clinical technique labs.

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]

We record material name and brand but not lot# except for items such as implants, bone grafting materials, etc.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF PUERTO RICO ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

V
C
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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general.

Yes.

2. What matrix system are they using for class II resins?

Tofflemire plus metal band.

3. What finishing and polishing kits for resins are they using?

Comosipro – Brasseler, Rubber Cups/Ultradent (green, yellow and white).

4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years.

Not yet. Looking for the financial aid to implement it

5. Has anyone moved over to single-use burs?

No.

UFCD:

6. Are the students using any kind of new technology to self-assess their work?

No.

7. Have you changed or added new teaching methods for millennial students in the past 3 years?

Introduction of Black Board and the use of the iPad Tablet in pre-clinical course.

U
K
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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.), and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?

N/A

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps?

No.

Are the students in the clinical setting using these two products?

No.

If you are, are you still teaching calcium hydroxide as a viable option?

Yes, for direct pulp capping.

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded?

11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises?

Calibration is performed with pictures taken from previous competency exams. Two graders for each student and the test is blinded.

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.]

No.

What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school?

Materials and equipment are bought directly from the manufacturer or recognized vendors.

13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]

Materials' name and manufacturers' information are documented on the patient record.

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants.

UNIVERSITY OF ALABAMA BIRMINGHAM ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

V
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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *Pins are used when needed, but rarely used. We continue to teach amalgam. An estimate is that half of posterior restorations are amalgam and half are composite (this excludes cervical lesions restorations)*
2. What matrix system are they using for Class II resins?
Students have the Garrison Composit-Tight kit plus one Composit-Tight 3D ring. The sectional matrix is used when appropriate. If not appropriate, the Tofflemire matrix is used.
3. What finishing and polishing kits for resins are they using?
The Brasseler EP kit (EP = Esthetic Polishing discs) and the Dentsply Finishing and Polishing Enhance kit (rubber points and cups and the polishing pastes).
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *D2 will have training in digital impressions with CAD/CAM this school year – still in planning stages.*
5. Has anyone moved over to single-use burs? *No. We are considering the change.*

UF
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6. Are the students using any kind of new technology to self-assess their work?
Not at this time. We have considered this.
7. Have you changed or added new teaching methods for millennial students in the past 3 years?
We use a combination of traditional lectures and online teaching for the preclinic operative course.

U
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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? Additionally, how involved are they (progress note, completing treatment, consultations, etc.), and do they include radiographs? Also, how do AXIUM users handle instrument cassette requests from and dispensing to student dentists?
We use SALUD for patient records. We use SALUD for presenting standardized patient materials for our case-based courses in D1 and D2 years. Radiographs are stored in another

system which is linked to the SALUD records. Radiographs are used in the case based courses. We hope to link the case based materials with the pre-clinic exercises.

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? *These materials are used (taught) in the endodontic and pediatric clinics but not in the comprehensive care clinic as we see mostly age 20 and over.*

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? How many faculty are permitted to grade competency exams? Are examinations blinded? *Two faculty grade each clinical competency exam. One of the two must be a full-time faculty member or a group manager (some group managers are half-time faculty). The clinical grading is not blinded. The preclinical grading of competency / practical exams is blinded and two faculty grade each.*
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? *Our mock board is only the simulation portion.*

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? *Not that we know of.*
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.] *Not routine for every restorative material.*

REGIONAL CODE AGENDA

To be established by the respective Region and Regional Director. Please also report on responses to the Regional Agenda by all participants

EASTERN CAROLINA UNIVERSITY ANSWERS TO THE FOLLOWING QUESTIONS FROM REGION VI SCHOOLS:

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1. Are any schools still using pins (TMS) for amalgam? Comment on your clinic's use of amalgam in general. *Yes, we at ECU are using pins with amalgam for cusp replacement and core buildups.*
2. What matrix system are they using for class II resins? *Palodent , Automatrix, Unimatrix*
3. What finishing and polishing kits for resins are they using? *Jiffy points, Polishing wheels, Sof-Lex and interproximal strips*
4. Other Schools' perspective, based on their experience using CAD/CAM for Operative educational purposes, as to successful methods and curricula in the D1-2 years. *Utilized in Dental anatomy for digital wax-ups and preclinical operative for Cad-Cam Onlay Project.*
5. Has anyone moved over to single-use burs? *No.*

UF
CD
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6. Are the students using any kind of new technology to self-assess their work? *Yes. We've been using digital self-assessment forms as well as digital portfolios using their ipads.*
7. Have you changed or added new teaching methods for millennial students in the past 3 years? *Yes, we are utilizing problem-based learning involving critical thinking, which is out of the box. We are encouraging active learning incorporating flipped classroom and trying to encourage a self-directed, selfdisciplined , self-aware and self-corrective approach by laying more emphasis on self-assessment. We have created and implemented use of iBooks and new self-directed forms. We re-invented Dental Anatomy to be 100% based on clinical scenarios.*

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8. With regard to AXIUM users, how many of us are using standardized patients in preclinical courses to get students ready prior to clinical experiences? (*We at ECU are*) Additionally, how involved are they (progress note, completing treatment, consultations, etc.), and do they include radiographs? (*Very involved, Yes to all*)

Also, how do AXIUM users handle instrument cassette reqsts from and dispensing to student dentists? *(All are checked out via axium based on their procedures and returned back via scanners linked to student accounts)*

LECOM:

9. Are you teaching Theracal and/or MTA for the treatment of routine asymptomatic non-carious mechanical exposures-and for indirect pulp caps? (*Material not available at ECU*) Are the students in the clinical setting using these two products? If you are, are you still teaching calcium hydroxide as a viable option? (*Yes*)

ULouisville:

10. How are faculty calibrated for grading operative competency examinations? (*Faculty calibration sessions, exercises, Faculty are asked to attend lectures related to the course and pre clinical labs entail meeting ahead of time to discuss what needs to be achieved and what the approach will be*). How many faculty are permitted to grade competency exams? (*Faculty involved in the course i.e lecturing and teaching in the sim labs are allowed to grade (Full time faculty)*). Are examinations blinded? (*Absolutely, including Self-Assessment*)
11. How many schools are using live patient examinations for "mock dental board" examinations versus dentoform simulated exercises? (*We at ECU are*)

Meharry:

12. Does your school use gray materials from secondary markets? [Please see attached article.] What safeguards does your school employ to prevent materials from gray markets being introduced and utilized at the school? (*No, we have a materials committee that oversees the whole process*).
13. What documentation does your school employ for dental materials in the patient medical record? Do you include manufacturer? Brand? Lot #? Is there a simple way to track materials that are being placed in the patient's mouth in case of recall? [Please see attached article.]
For most cases, the students will only list the materials (type/brandname) used.

Appendices

CAMBRA Reference Chart

<p>Low</p>	<p>OTC fluoride toothpaste BID</p> <p>Oral hygiene instruction</p> <p>Dietary recommendations</p>	<p>6-12 month recall</p> <p>Radiographs every 2436 months</p>
<p>Moderate</p>	<p>All of the above plus:</p> <p>Fluoride varnish at each recall</p> <p>0.05 % NaF rinse BID</p> <p>Xylitol gum 6-10g/day, chew 6-10 pieces/day</p> <ul style="list-style-type: none"> - Spry® - Search '100% xylitol gum' online <p>Consider sealants</p>	<p>4-6 month recall</p> <p>Radiographs every 1824 months</p>
<p>High</p>	<p>All of the above plus:</p> <p>5000 ppm toothpaste BID</p> <p>Assess saliva</p> <ul style="list-style-type: none"> - Test for flow and pH - Clinical description may suffice <p>Acidogenic bacterial load test</p> <ul style="list-style-type: none"> - If needed, 10ml 0.12% CHX rinse for 1 minute at night <i>at least 1 hour apart from using fluoride</i> for one week each month. Retest at recall. 	<p>3-4 month recall</p> <p>Radiographs every 618 months</p>

Form II

Name:

Date: **EXTREME RISK**

Our assessment reveals you are at **EXTREME RISK** of having dental decay in the near future. This is due mainly to your dry mouth. We want to help you reduce that risk and avoid new decay if at all possible. We recommend the following:

For you to do at home and between visits:

- **Use an ADA approved 0.05% fluoride rinse from the dental care section of any store**
 - Often referred to as ‘Anticavity’
 - Act®
 - Insure ADA approval if purchasing generic form to insure proper release of fluoride
- **Chew 6 to 10 pieces of 100% xylitol-sweetened gum each day**
 - Spry®
 - Search online for ‘100% xylitol gum’
- **Use a high fluoride toothpaste**
 - 5,000 parts per million fluoride twice daily in place of your regular toothpaste. Your dentist can prescribe some for you.
- **Take measures to reduce the acidity of your mouth due to your lack of saliva**
 - Rinse with or sip frequently a mixture of 2 teaspoons of baking soda in 8 ounces of water
 - Use an over-the-counter product such as CTx2™ spray, by CariFree®, available online
- **Take measures to replace critical ions for fighting tooth decay that are missing due to your dry mouth**
 - MI Paste®
 - Trident® w/ Recaldent®
- **Follow dietary recommendations made by your dentist, which may include:**
 - Reducing your daily intake of carbonated and/or sweetened beverages (ex. “soda”, sweet tea)
 - Reducing your frequency of snacks that contain fermentable carbohydrates (ex. sugary sweets, candy, crackers, cereals)
- **If recommended by your dentist, consider a daily medication that may increase your saliva flow**
- **If recommended by your dentist, use the prescribed antibacterial mouth rinse as directed**

For you to do with your dentist:

- **Return for a caries recall exam in 3 months**
 - This evaluates your progress and checks for any new dental decay
- **Get new radiographs (x-rays) every 6 months**
 - This will check for cavities between your teeth or in other areas that are not directly visible
- **Get a fluoride varnish for all of your teeth every 3 months at your caries recall exams**
- **Get sealants applied to the biting surfaces of your back teeth** – This helps prevent re-infection of cavity-causing bacteria
- **Complete tests assessing the quality and quantity of saliva and bacteria in your mouth** – This measures the amount of cavity-causing bacteria in your mouth. If excessive, it may be recommended that you use an antibacterial rinse at home to reduce this level of infection.

Form III

Name: _____ Date: **HIGH RISK**

Our assessment reveals you are at a HIGH RISK of having dental decay in the near future. We want to help you reduce that risk and avoid new decay if at all possible. We recommend the following:

For you to do at home and between visits:

- **Use an ADA approved 0.05% fluoride rinse from the dental care section of any store**
 - Often referred to as ‘Anticavity’
 - Act®
 - Insure ADA approval if purchasing generic form to insure proper release of fluoride
- **Chew 6 to 10 pieces of 100% xylitol-sweetened gum each day** – Spry®
 - Search online for ‘100% xylitol gum’
- **Use a high fluoride toothpaste**
 - 5,000 parts per million fluoride twice daily in place of your regular toothpaste. Your dentist can prescribe some for you.
- **Follow dietary recommendations made by your dentist, which may include:**
 - Reducing your daily intake of carbonated and/or sweetened beverages (ex. “soda”, sweet tea)
 -
 -

Reducing your frequency of snacks that contain fermentable carbohydrates (ex. sweets, candy, crackers, cereals)

- **If recommended by your dentist, use the prescribed antibacterial mouth rinse as directed**

For you to do with your dentist:

- **Return for a caries recall exam in 3 to 4 months**
 - This evaluates your progress and checks for any new dental decay
- **Get new radiographs (x-rays) about every 6 to 18 months**
 - This will check for cavities between your teeth or in other areas that are not directly visible
- **Get a fluoride varnish for all of your teeth every 3 to 4 months at your caries recall exams**
- **Get sealants applied to the biting surfaces of your back teeth** – This helps prevent re-infection of cavity-causing bacteria
- **Complete a bacterial test**
 - This measures the amount of cavity-causing bacteria in your mouth. If excessive, it may be recommended that you use an antibacterial rinse at home to reduce this level of infection.
- **If recommended, complete a test of your saliva**
 - This will check your ability to make enough saliva that is of adequate “quality” to fight tooth decay

Form IV

Name:

Date:

MODERATE RISK

Our assessment reveals you are at a MODERATE RISK of having dental decay in the near future. We want to help you reduce that risk and avoid new decay if at all possible. We recommend the following:

For you to do at home and between visits:

- **Use an ADA approved fluoride toothpaste twice a day**
- **Use an ADA approved 0.05% fluoride rinse from the dental care section of any store**
 - Often referred to as ‘Anticavity’

- Act®
- Insure ADA approval if purchasing generic form to insure proper release of fluoride
 - o **Chew 6 to 10 pieces of 100% xylitol-sweetened gum each day** -

Spry®

- Search online for ‘100% xylitol gum’
 - o **Follow dietary recommendations made by your dentist, which may include:**
- Reducing your daily intake of carbonated and/or sweetened beverages (ex. “soda”, sweet tea)
- Reducing your frequency of snacks that contain fermentable carbohydrates (ex. sweets, candy, crackers, cereals)

For you to do with your dentist:

- o **Return for a caries recall exam in 4 to 6 months**
 - This evaluates your progress and checks for any new dental decay
 - o **Get new radiographs (x-rays) about every 18 to 24 months**
 - This will check for cavities between your teeth or in other areas that are not directly visible
- o **Get a fluoride varnish for all of your teeth at your recall exams**
- o **Consider getting sealants applied to the biting surfaces of your back teeth**
 - This helps prevent re-infection of cavity-causing bacteria and can be discussed with your dentist