Indiana University School of Dentistry

Doctor of Dental Surgery Program
and
Advanced and Specialty Programs

IUPUI Program Review and Assessment Committee Report 2016

Indiana University School of Dentistry
Doctor of Dental Surgery, Advanced and Specialty Programs
PRAC Report, 2015-16

Overview of Programs

The Indiana University School of Dentistry (IUSD) offers a certificate program in Dental Assisting, an Associate of Science degree in Dental Hygiene (DH), a Doctor of Dental Sciences (DDS) and post-graduate Advanced Education and Specialty programs degrees in Periodontics, Pediatric Dentistry, Oral Surgery, Endodontics, Prosthodontics, Orthodontics, Operative Dentistry, Dental Materials and Preventive Dentistry.

This report contains the review of the DDS program which is a graduate level program and selected Advanced and Specialty programs. The Dental Hygiene PRAC report is submitted under separate cover.

Introduction: DDS PROGRAM

Dental education in the U.S. is competency-based. The accrediting body of dentistry, the Commission on Dental Accreditation (CODA), permits each dental school to establish the specific learning outcomes and associated measures that, when demonstrated independently by each student, are deemed to be evidence of successful completion of the requirements of the degree. IUSD maintains detailed student-level tracking of all competencies via its outcomes measures documentation. At the program and institutional level there are additional measures used to track the progress of the school towards the stated Mission, Goals, and Vision of IUSD. http://www.iusd.iupui.edu/about-us/mission-and-goals/).

Accreditation and Ongoing Institutional and Program Review

In 2013 IUSD became the first dental school in the country to be accredited using the revised CODA standards.   The site visit was highly successful and the school was fully accredited. Ongoing Institutional and Program review is an expectation that must be demonstrated by all accredited dental programs. The DDS Curriculum and Assessment Committee (CAC), DDS Student Progress Committee and the IUSD Institutional Outcomes Assessment Committee (IOAC) are examples of standing committees charged with ongoing review of the predoctoral program, individual student achievement and the effectiveness of the institution, respectively.

Data used each year in the course and program reviews include:
- Analysis of student performance in courses, clinics, discipline competency examinations, and on National Written and Regional Clinical Boards
- Course syllabi
- Course/module review forms (completed by instructor)
- CoursEval reports (the electronic data base of student course evaluations)
- Student focus groups reports
- Senior Exit Interviews (IUSD and American Dental Education Association)

This information is collected by the IUSD Office of Academic Affairs and then routed to the appropriate faculty member, standing committee of the faculty council or administrative office in order to identify areas of strength or deficiencies, and for recommendations for improvement.

STUDENT LEARNING OUTCOMES, DOCTOR OF DENTAL SURGERY

In addition to successfully completing the curriculum, IUSD has 20 Competencies that each student must independently challenge and successfully complete to be deemed competent for the beginning practice of general dentistry and to be eligible for graduation. The Competencies are developed by the discipline or disciplines working together, and are adopted by the Faculty. The specific competency assessments that are used to evaluate student competence are

outlined in the IUSD Competency Manual, which serves to guide faculty and students in the preparation for, and evaluation of, student competence. Each clinical assessment, developed by the related disciplines, is used as a direct measure of at least one IUSD Institutional Competency, and most, if not all, map to all four of the IUPUI PGPLs. Students are tracked **individually** in their progress toward each of these competencies (student learning outcomes).

The IUSD Institutional Competencies for the Dental graduate:

The IUSD graduate **must be competent** in:

1. patient assessment, diagnosis, and referral (PGPL 1,2,3,4)
2. treatment planning (PGPL 1,2,3,4)
3. communicating and collaborating with individuals and groups to prevent oral disease and promote oral and general health in the community (PGPL 1,2,3,4)
4. control of pain and anxiety, clinical pharmacology, and management of related problems (PGPL 1,2,3,4)
5. prevention and management of dental and medical emergencies (PGPL 1,2,3,4)
6. detection, diagnosis, risk assessment, prevention, and management of dental caries (PGPL 1,2,3,4)
7. diagnosis and restoration of defective teeth to form, function and esthetics (PGPL 1,2,3,4)
8. replacement of teeth including fixed, removable and dental implant prosthodontic therapies (PGPL 1,2,3,4)
9. diagnosis and management of periodontal disorders (PGPL 1,2,3,4)
10. prevention, diagnosis and management of pulpal and periradicular diseases (PGPL 1,2,3,4)
11. diagnosis and management of oral mucosal and osseous disorders (PGPL 1,2,3,4)
12. collecting and assessing diagnostic information to plan for and perform uncomplicated oral surgical procedures (PGPL 1,2,3,4)
13. recognizing and diagnosing malocclusion and space management needs (PGPL 1,2,3,4)
14. discerning and managing ethical issues and problems in dental practice (PGPL 1,2,3,4)
15. understanding and application of the appropriate codes, rules, laws and regulations that govern dental practice (PGPL 1,2,3,4)
16. behavioral patient management and interpersonal skills (PGPL 1,2,3,4)
17. understanding the fundamental elements of managing a dental practice (PGPL 1,2,3,4)
18. performing and supervising infection control procedures to prevent transmission of infectious diseases to patients, the dentist, the staff and dental laboratory technicians (PGPL 1,2,3,4)
19. providing evidence-based patient care in which they access, critically evaluate, and communicate scientific and lay literature, incorporating efficacious procedures with consideration of patient needs and preferences (PGPL 1,2,3,4)
20. recognizing the role of lifelong learning and self-assessment to maintain competency (PGPL 1,2,4)

Student preparation for, and evaluation of, competence occurs as an integrated part of all aspects of the predoctoral program with multiple measures of student mastery of knowledge, skills, behaviors and attitudes. Decisions as to the numbers and types of experiences students must have prior to attempting summative written or clinical competency examinations are determined by the disciplines most directly responsible for that content and are reviewed annually and revised as needed.

Formative and summative assessments utilized in the program are summarized in Table 1.

TABLE 1. Formative and Summative Assessments in Pre-doctoral Dental Education		
Assessment Area	**Formative Assessments**	**Summative Assessments**
Clinical Procedures	• Applied pt mgmt (GLA) activities • Daily comp care clinical assessment • Rotation clinical evaluations • Lab examinations • OSCE • Rounds presentations • Written examinations	• Case-based assignments • Evidence-based literature critique • Lab examinations • OSCE • Written examinations • Clinical competency assessments
Problem Solving	• Applied pt mgmt (GLA) activities • Daily comp care clinical evaluation • Rotation clinical evaluation • Lab examinations • OSCE • Reflective writing, including ethics and behavioral sciences • Rounds presentations • Written examinations	• Case-based exams • Lab examinations • OSCE • Reflective writing • Written Examinations • Clinical competency assessments
Clinical Reasoning	• Applied pt mgmt (GLA) activities • Daily comp care clinical evaluations • Rotation clinical evaluations • Lab examinations • OSCE • Reflective writing • Rounds presentations • Written examinations • Annotated Bibliography Assignments	• Case-based exams • Lab examinations • Reflective writing • Written Examinations • Clinical competency assessments
Professionalism	• Applied pt mgmt (GLA) activities • Clinical professionalism 360 evals • Daily comp care clinical evaluations • Rotation clinical evaluations • Ethical sensitivity assessment • OSCE • Reflective writing • Rounds presentations (ethical, clinical and behavioral rounds) • Written examinations	• Case-based exams • OSCE • Reflective writing • Written examinations Clinical competency assessments
Ethical Decision-making	• Applied pt mgmt (GLA) activities • Clinical professionalism 360 evals • Daily comp care clinical evaluations • Rotation clinical evaluation • Ethical sensitivity assessment • OSCE • Reflective writing • Rounds presentations (ethical, clinical and behavioral) • Written examinations • Annotated Bibliography Assignments	• Case-based exams • OSCE • Reflective writing • Written examinations • Clinical competency assessments

TABLE 1. Formative and Summative Assessments in Pre-doctoral Dental Education		
Assessment Area	**Formative Assessments**	**Summative Assessments**
Communication Skills	• Clinical professionalism 360 evals • Daily comp care clinical grading • Rotation clinical grading • OSCE • Reflective writing • Rounds presentations • Written examinations • Annotated Bibliography Assignments	• Clinical competency assessments • Critical incident reports • OSCE • Reflective writing • Written examinations

In dentistry, clinical assessments are highly authentic, and "capstone" student experiences are very similar to those required of a practicing dentist. As an example, a student's ability to diagnose, treatment plan, clinically prepare and evaluate the finished work for a patient requiring multiple dental procedures is done by direct evaluation of these skills (patient management and communication, diagnosing, treatment planning, clinically providing the needed treatment and then evaluating the outcomes of the treatment) within the context of an actual patient. Students who are not successful on competency examinations are remediated as needed, given additional opportunities to master the skills and then must attempt the competency again. In addition to the successful completion of all of the required courses in the curriculum, students are not eligible to graduate until they have demonstrated competence for all 20 Institutional Competencies

Student outcomes for each of the 20 IUSD Competencies are continuously tracked, are compiled annually for use by Faculty Standing Committees in planning and decision making. Other student measures, including Focus Group Data and Senior Exit Surveys provide data used in program development, benchmarking, and for curricular and advising assessment. Examples of these standing committees are:

1. IUSD Progress Committee to certify students are prepared for the independent practice of dentistry prior to approving the student for graduation.
2. Institutional Outcomes Assessment Committee to evaluate the effectiveness of the program and curriculum.
3. Curriculum and Assessment Committee for ongoing curricular review.
4. Department, Discipline, Course and Module faculty to evaluate curriculum and classroom assessment, competency measures, and content.

Indirect Measures

Indirect measures are also used to evaluate student outcomes and programmatic effectiveness. Student Focus Groups are used to collect student feedback on a broad range of issues, including unplanned curricular redundancy, currency of content in courses and the effectiveness of new curricular components incorporated into the program. IUSD also has a student-run, faculty attended Student Curriculum and Assessment Committee that meets regularly and which provides input directly to the DDS Curriculum and Assessment Committee (CAC). In addition, each DDS class has a representative on the CAC, and students are welcomed to provide their insight.

Each DDS student completes a Senior Exit Survey for the American Dental Education Association and an additional Exit Survey for IUSD. These surveys provide information about student satisfaction with advising, the curriculum, their sense of preparedness to practice and job placement. Recent exit interviews indicate that approximately 25% of IUSD DDS graduates go on to advanced programs; and most others who had searched for a position of employment had secured a job that they would begin upon obtaining their license.

IN 2015-16, it was recognized that there was a need to have better detail about past graduates, their employment, and how well prepared employers felt the new graduate was initially.   In addition, there was need to develop a method to connect DDS students to potential employers. The Office of Admissions and Student Affairs (OASA), working with an advisory group of faculty, Indiana Dental Association staff and practicing dentists, and using enterprise Symplicity resources, launched the IU Dentistry Professional Pathways: Staying Connected site in January 2016. This web-based system, managed by IUSD OASA, has the potential for a peer mentoring function in Phase II which will connect dental students with practicing dentists throughout their DDS education program.

2015-16 Examples of Program Review and Revisions

Program-level Curriculum Assessment: The IUSD Curriculum and Assessment Committee

CODA Standard 2-7 states:

> The dental school **must** have a curriculum management plan that ensures:
> a. an ongoing curriculum review and evaluation process which includes input from faculty, students, administration and other appropriate sources;
> b. evaluation of all courses with respect to the defined competencies of the school to include student evaluation of instruction;
> c. elimination of unwarranted repetition, outdated material, and unnecessary material;
> d. incorporation of emerging information and achievement of appropriate sequencing.

At IUSD, the policies and work that support this Standard are undertaken by the Curriculum and Assessment Committee. (CAC).

IUSD has established a four-year curriculum review plan that looks in detail at each course within a given semester and year. This serves as one foundation for systematic, on-going program review. The program review schedule has been mapped out through 2024 as follows:

Semester	Portion of the Curriculum for Review	Special Reviews
Fall 2015	Summer Session Year 1	
Spring 2016	Fall Semester of Year 1	
Fall 2016	Spring semester of Year 1/Summer Session Year 2	
Spring 2017	Fall Semester of Year 2	
Fall 2017	Spring semester of Year 2/Summer Session Year 3	
Spring 2018	Fall semester of Year 3	
Fall 2018	Spring semester of Year 3/Summer Session Year 4	
Spring 2019	Fall Semester of Year 4	
Fall 2019	Spring semester of Year 4	Evaluation of Recommendations and Action Plans Years 1-4
Spring 2020	Summer Session Year 1	
Fall 2020	Fall Semester Year 1	Accreditation
Spring 2021	Spring semester of Year 1/Summer Session Year 2	
Fall 2021	Fall Semester of Year 2	
Spring 2022	Spring semester of Year 2/Summer Session Year 3	
Fall 2022	Fall semester of Year 3	
Spring 2023	Spring semester of Year 3/Summer Session Year 4	
Fall 2023	Fall Semester of Year 4	
Spring 2024	Spring Semester Year 4	

In AY 2015-16, the D1 spring semester was reviewed in depth, including evaluation of syllabi and course content, course director comments, student assessment of courses and student focus groups. Some of the evaluation topics, recommendations and current status are provided as examples.

Evaluation topic	Problem	Recommendation	Status
History of Dentistry Module	Student assessment of unit indicates material, while interesting, is not critical to the beginning dentist and requires too much contact time in the busy D1 summer.	Create the an online version of the course or significantly reduce the contact hours.	Beginning Summer 2016, this unit will be reduced from 8 contact hours to 2 and will a section of the Ethics and Professionalism module. Action completed.
Oral Diagnosis and Treatment Planning	Students, faculty and external assessments (CDCA DSE exam scores) indicate need for increased emphasis and experience with oral diagnosis and treatment planning. Evaluation of curriculum identified opportunities for introduction of discipline concepts in D1 spring.	Develop Introductory Diagnosis and Treatment Planning Course that will serve as a foundation to discipline-based treatment planning in D2-D4 years. Assessment of student learning to include faculty evaluation of student's ability to conduct extra and intra-oral assessment of patient.	Frist year course, Diagnosis and Treatment Planning was introduced in Spring, 2016. Course will be evaluated in AY 2016-17. Student focus group from summer 2016 indicated course was well received by students.
IPE development	Accreditation standards require that DDS students be competent in communicating and collaborating with other members of the health care team. Assessment of the curriculum indicates a need for a more purposeful, integrated approach to meeting the educational and assessment aspects of this standard.	Work with the IU IPE Center to develop anchor experiences across the campus. Further develop the IUSD IPE Group to provide oversight for proposed educational experiences, assessment etc.	TEACH curriculum set to begin implementation in 2017; planning for how to implement within the curriculum is ongoing. IUSD IPE Group now includes members of the staff, the librarian, and institutional research faculty. Created an IUSD IPE Proposal Rubric to be used by the IUSD IPE Group in review of suggested new IPE collaborations. Implemented Summer 2016. Continued IPE Ethics seminar with Nursing, PA and DH students
Cariology through the curriculum	Student and faculty review of newly created D1 course indicated a need for additional curricular time and opportunity for application related to Cariology.	Develop a two-semester, second year set of courses that include an opportunity for clinical application of the principles of cariology.	Developed and implemented fall and spring Clinical Applications of Cariology and Operative Dentistry courses (D630 & D631). Will be evaluated AY 16-17.

STUDENT OUTCOMES, 2015-16

Graduation rates for the Doctor of Dental Surgery program are extremely high, averaging almost 95% of students graduating in four years. For the Class of 2016, the original D1 cohort of 104 students, 98 graduated with their class (94.23%). The Student success on written and clinical licensing exams is also excellent: 100% of the Class of 2016 passed NBDE Part I and Part II. In addition, all members of the Class of 2016 have successfully completed all 20 of the Institutional Competencies.

SUMMARY

The IUSD Institutional Competencies define what a competent graduate will be able to do upon graduation. Multiple assessments are used to evaluate students across four years of the program and include the assessment of broad range of attributes. Competency Assessment Exams* serve as the final measurement of the defined set of knowledge, values and skills that have been developed through the formative daily feedback process.

The School has multiple processes in place to evaluate the content of the Doctor of Dental Surgery program, the measurement instruments used in student evaluation and the outcomes of those assessments which ensure that there is meaningful, ongoing evaluation of student learning. There are processes in place that provide for ongoing evaluation of the program as a whole which result in meaningful improvements in student learning.

* See Example Competency Assessment Instrument in Appendix 1

Advanced and Specialty Programs Report

Advanced and Specialty Programs

The Indiana University School of Dentistry offers a Master of Science in Dentistry degree (MSD) in Operative Dentistry, Prosthodontics, Endodontics, Periodontics, Pediatric Dentistry, Preventive Dentistry and Orthodontics. A 4-year residency program is also available in Oral and Maxillofacial Surgery and there is a one-year certificate in Maxillofacial Prosthetics. The MSD requires that a student already has a DDS or DMD (or equivalent for non-U.S. trained students).

Students may also enroll in the university's graduate school for a MS in Dental Materials, and there is a PhD in dental sciences with tracks in Dental Materials, Dental Biomaterials, Preventive Dentistry and Oral Biology. These programs do not necessarily require a previous dental degree. Of the programs available at IUSD, the Commission on Dental Accreditation (CODA) accredits Pediatric Dentistry, Prosthodontics, Endodontics, Periodontics, Oral and Maxillofacial Surgery and Orthodontics; these programs participated in the most recent CODA site visit in September 2013. The non-CODA accredited post-graduate programs participated in a program review process with the IUPUI campus in 2012-13.

In the first year of their program, all Advanced and Specialty students in each graduate program participate in a core of common Graduate Specialty courses which include two Oral Pathology courses, Biostatistics, Advanced Radiology, Oral Biology, Head and Neck Anatomy and **Research Methodology.** In each program, students must demonstrate mastery of the basic and dental sciences through their performance on written and oral examinations. Students must maintain a minimum grade point average of 3.0 and demonstrate evidence of continuing professional growth (as defined by the program) to remain in good standing.

The IUSD Graduate Program Directors meet monthly to identify common issues and program needs.   For example, the recently implemented core course, Research Methodology, was created to standardize the teaching and evaluation of research methods across the various post-graduate and specialty programs. Based on review of residents' progress in moving through the research requirements for the degree, the Directors adopted new expectations for student research protocol submissions. In order to emphasize the importance of a timely approach to the research process, students must meet established dates or suffer significant grade deductions that can impact their graduation. In addition, in all programs there is a requirement that the resident present the research at IUSD Research Day or at a discipline-specific national meeting.

Beyond core courses, the content and clinical activities of each advanced program are very discipline specific and as such, they are briefly outlined below with *examples* of the program student learning objectives, mapped to the Principles or Graduate and Professional Learning (PGPL), along with the assessment mechanisms and findings, program actions and improvements.

A selected group of programs is presented in this report.

PLEASE NOTE: The items included for the advanced programs are **representative rather than exhaustive.**

Name of Advanced or Specialty Program**:** **Orthodontics**

Orthodontics
Orthodontics is a highly competitive program that admits 7 students each year from the approximately 200 applicants received. During the 24 months residency program, all orthodontic residents must acquire a Master's degree.

The Orthodontic Postgraduate Program at Indiana University School of Dentistry trains ethical and competent orthodontists who are able to:
1. Provide the best possible orthodontic treatment for patients.**
2. Utilize a scientific background to make competent treatment decisions and to assess the quality of orthodontic treatment they provide.
3. Contribute significantly to the health of the community through meeting their social and professional responsibilities.
4. Contribute to the advancement of orthodontics through basic, applied an educational research and the dissemination of those findings.

** "quality" patient care is further defined and outlined by the American Board of Orthodontics (ABO) and the Commission on Dental Accreditation (CODA) with specific proficiency statements. For example, each graduate must demonstrate **proficiency** in more than 16 areas and have **familiarity** with an additional 14 areas, including the following:
Development of treatment plans and diagnoses based on information about the normal and abnormal growth and development.
Apply knowledge about the diagnosis, prevention and treatment of pathology of oral tissue.
Provide all phases of orthodontic treatment including initiation, completion and retention.
(Be familiar with the) psychological aspects of orthodontic and dentofacial orthopedic treatment.

In the following tables, each broad learning objective or outcome is listed, along with related Principles of Graduate and Professional Learning that relate most closely to the outcome. Assessment measures and the intent of the measure is also included, along with resultant changes or revisions recently identified or implemented to improve student learning. For example, written and oral assessments over orthodontic content that are conducted in the first year of residency identified that joint degree students were more likely to be unsuccessful in orthodontic courses than single degree students. In order to support the success of the students, the joint degree program has been suspended. Students are still encouraged to have additional training as they desire, but do not enroll in two graduate programs simultaneously.

Examples of student objectives, assessment mechanisms and use of information for program improvement are listed below in the tables that follow.

The Orthodontic Postgraduate Program at Indiana University School of Dentistry trains ethical and competent orthodontists who:

Obj. #1   Provide the best possible orthodontic treatment for patients.*

Obj. #2 Utilize a scientific background to make competent treatment decisions and to assess the quality of orthodontic treatment they provide.

Related IUPUI PG&PL**	Assessment Mechanisms	Intent of assessment	When assessed	Program Action Steps	Results Achieved
#1.Demonstrate the knowledge and skills needed to meet disciplinary standards of performance. **#2. Communicate effectively with peers, clientele and the general public.**	1. a. Course grades in Core Master's Classes (5 courses) via written and laboratory examination (minimum of 70% to pass). b. Orthodontic courses assessed via laboratory and written examination (minimum of 70% to pass).	Measure knowledge in disciplinary and cross disciplinary content.	Ongoing in first year of specialty program.		All ortho residents successfully completed Core classes.
#3. Think critically and creatively to improve practice in the field. **#4. Meet all ethical standards established for the discipline.**	2. Weekly Grand Rounds Case Conferences (graded course; minimum of 70% to pass).	Assessment of clinical knowledge and application of clinical knowledge to patient care.	Weekly feedback; course grade by semester.		2015-16 all students passed
	3. Qualifying Exam (end of year 1); both written and oral. Each section must be independently passed at a minimum of 70% and each question by at least 40%.	Assess discipline knowledge, problem solving as it relates to patient cases, and ability to communicate treatment plans.	May/June of first year	Ongoing evaluation of exam content & student outcomes in summer.	Since 2012, only 1student has been identified with significant deficits and was offered opportunity to repeat the year. The student successfully completed the program.

Obj. # 1 & # 2. cont.

Related IUPUI PG&PL	Assessment Mechanisms	Intent of Assessment	When assessed	Program Improvement & Action Steps	Results Achieved
**Due to the integrated and authentic nature of most assessments in clinical patient care, which require both content knowledge and skills, the ability to communicate with patients and faculty in order to explain and gain compliance, and the necessity to provide patient care that is compliant with the ethical and legal standards of care, all of the Principles of Learning in Professional Education are represented in most of the Orthodontics Program objectives.	5. Evaluate 30 completed cases using ABO format (System allows quantification of patient outcomes related to measures of quality in final orthodontic treatment results)	Assess quality of care provided to patients over length of treatment; demonstrate provider's ability to assess the outcomes of care. Utilization of ABO format improves calibration of assessment.	Ongoing throughout program.	Review of reduced numbers of cases completed led to changes in patient assignments, evaluation of faculty assignments and how duration of treatment to improve student access to diverse and complex patients.	Reduction in assigned cases (from 40 to 30) has led to more in-depth evaluation of each case.
	7. Complete the Phase II American Board of Orthodontics Exam	A capstone measure of the student's successful mastery of the principles and practice of Orthodontics.	At the end of the second year of residency.	The high pass rate on this national competency exam indicates that the students are mastering the knowledge and skills expected for the field.	Since 2008, all residents except 2 have passed this Exam on the first attempt. One student passed the examination on the second attempt.

The Orthodontic Postgraduate Program at Indiana University School of Dentistry trains ethical and competent orthodontists who:

Obj. #3 Contribute significantly to the health of the community through meeting their social and professional responsibilities.

Related IUPUI PG&PLs	Assessment Mechanisms	Intent of assessment	When assessed	Program Improvement & Action Steps	Results Achieved
#1. Demonstrate the knowledge and skills needed to meet disciplinary standards of performance. **#2. Communicate effectively with peers, clientele and the general public.** **#4. Meet all ethical standards established for the discipline.**	In addition to the applicable assessments listed above, students have practice management evaluations that include the assessment of their treatment of patients who have: a. craniofacial anomalies; b. biopsychosocial complications to orthodontic care	To evaluate the thoroughness and quality of care provided to all patients, including those with special needs.	At least twice per year.	Restructured format of Craniofacial clinic in Grad Ortho. Residents rotate to clinic area under the supervision of a CFA specialist.	Continued IUSD emphasis on care for those with special needs and craniofacial anomalies.
	Post graduate survey of participation in organized dentistry, community activities, provision of free or reduced cost treatment to patients of need, and treatment of children with special needs or craniofacial anomalies	To determine the degree to which students are meeting social and professional responsibility as practitioners.	1-5 years post graduate	Recent responses to grad surveys has not been robust. Program Director will be reviewing the process in AY16-17.	

Name of Advanced or Specialty Program: PERIODONTICS

The dental specialty of Periodontics requires an additional 36 months of clinical and didactic training. Admission to the program is competitive, and successful applicants must have maintained a minimum of 3.0/4.0 grade point in their dental education program and have graduated in the upper third of their class; the maximum number of students enrolled in all three years of the program cannot exceed 15. In the fall of 2016, 4 students were accepted.

As with most advanced patient care programs, the stated student outcomes incorporate many of the aspects of knowledge in the specialty with the clinical care of patients. By definition, the standard of care for patients includes the ethical practice of one's discipline.

Selected student learning objectives for Periodontics

Graduates will be able to:
1. demonstrate they have acquired the scientific knowledge, diagnostic and therapeutic skills involved in clinical periodontics and implant dentistry.
2. critically evaluate the dental literature, research and new therapeutic techniques.
3. diagnose and effectively treat periodontal disease and edentulism with dental implants.
4. identify and integrate systemic and/or other oral conditions in establishing and maintaining periodontal health.
5. advance the understanding of the theory and methods of clinical and basic science research.
6. communicate knowledge of periodontics, oral medicine and related subjects to patients and in an academic environment.
7. demonstrate an understanding of the theory and methods of performing research.

Alignment with the Principles of Graduate and Professional Learning
The student objectives listed above align with the PGPLs and examples of how each principle might be conceptualized within the program are provided here.
PGPL #1 *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*
Students demonstrate the mastery of the knowledge and skills in periodontics during written and oral assessments within the program, demonstrate the integration and application of the knowledge and skills in daily patient care, and by successfully challenging the written, oral and patient-based examinations to become Board certified.
PGPL #2 *Communicate effectively with peers, clientele and the general public.*
Complex treatment plans require the ability to communicate with patients to determine their wants and needs, as well as the ability to share the expert's knowledge in a manner that is clear to the patient so that the patient is able to make an informed decision about their care. Treatment planning evaluations, faculty observation during patient care, oral defense of content knowledge and communication with peers via posters or presentations all demonstrate successful attainment of this PGPL.
PGPL#3 *Think critically and creatively to improve practice in the field.*
In addition to the care of patients, each periodontics resident must conduct original research that must be presented as either a thesis or as an article suitable for publication in a discipline journal.
PGPL#4. *Meet all ethical standards established for the discipline*.
The daily treatment of patients, including the safeguarding of protected health information and obtaining informed consent are evaluated with every patient. In addition, students engaged in research participate in the IRB process as outlined by the university.

Student assessment methods/measures of student learning related to the first student learning outcome objective is provided here as an **EXAMPLE** of the assessment process across the 3 year program. Each objective has multiple measures associated with the measure, similar to this example.

Desired student outcome	Assessment mechanisms/Measures	Findings
Graduates will demonstrate attainment of scientific knowledge and the acquisition of diagnostic and therapeutic skills involved in clinical periodontics and implant dentistry.	Proficiency in basic science and periodontal-related didactic courses as measured by written and oral examinations in didactic and clinical courses.	All residents have received a letter grade of B or greater and Pass in P/NP in didactic and clinical courses.
	American Academy of Periodontics In-Service Exam (ISE)	Since 2013, 18/23 graduate students have achieved a fiftieth percentile score or higher on at least one of the three ISEs. Students failing to test at least at the 50th percentile ISE were remediated by retesting on every question answered incorrectly. (Minimal passing score for remediation testing was 80%, all remediated students scored above 94%.)
	American Board of Periodontology Qualifying and Oral Exams	Since 2013, 15/15 of the graduated students have passed the ABP Qualifying Exam. Since 2013, 15/17 graduates have passed the ABP Oral Exam.
	Faculty performance evaluations in Advanced Periodontal Treatment Planning Seminars	All students have received a mean score of 3 (passing) or better on faculty evaluations
	Case Defense examinations	Since 2013, students have received a score of 70 or better on each of the 3 case defense examinations given during the three-year program.
	MSD Qualifying Oral & Written Examinations	Since 2013, 15/15 of the recent graduate students have successfully passed the MSD Qualifying Oral & Written Examinations. 3/15 required some remediation in certain areas before successful completion.

Name of Advanced or Specialty Program: ENDODONTICS

The dental specialty of Endodontics requires an additional 24 months of clinical and didactic training. Admission to the program is competitive, and successful applicants must have maintained a minimum of 3.0/4.0 grade point in their dental education program and have graduated in the upper third of their class. For 2016, 77 students applied to the program; three students were selected. Minimal post-doctoral experience for successful candidates may nclude a General Practice Residency (GPR), an Advanced Education in General Dentistry (AEGD) or 1-2 years of practice experience.

In addition to the common core courses for all advanced and specialty program students, the endodontics graduate students are enrolled in specialty specific courses, including dental trauma, local anesthesia, regenerative endodontics, use of cone beam technology in endodontics, pediatric and surgical endodontics, etc.

As with most advanced patient care programs, the stated student outcomes incorporate aspects of knowledge in the specialty with the clinical care of patients. By definition, the standard of care for patients includes the ethical practice of one's discipline.

Selected student learning objectives for Endodontics

Graduates will be able to:
1. demonstrate proficiency in the basic sciences and endodontic-related didactic courses.
2. increase the knowledge base of endodontics through research, publications and presentations.
3. critically evaluate endodontics with the appropriate literature.
4. develop clinical skills at the level of an endodontic specialist.

Alignment with the Principles of Graduate and Professional Learning
The student objectives listed above align with the PGPLs and examples of how each principle might be conceptualized within the program are provided here.
PGPL #1 *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*
Students demonstrate the mastery of the knowledge and skills in endodontics during written and oral assessments within the program, demonstrate the integration and application of the knowledge and skills in daily patient care, and by successfully challenging the written, oral and patient-based examinations to become Board certified.
PGPL #2 *Communicate effectively with peers, clientele and the general public.*
Complex treatment plans require the ability to communicate with patients to determine their wants and needs, as well as the ability to share the expert's knowledge in a manner that is clear to the patient so that the patient is able to make an informed decision about their care. Treatment planning evaluations, faculty observation during patient care, oral defense of content knowledge and communication with peers via posters or presentations all demonstrate successful attainment of this PGL.
PGPL#3 *Think critically and creatively to improve practice in the field.*
In addition to the care of patients, each endodontic resident must conduct original research that must be presented as either a thesis or as an article suitable for publication in a discipline journal.
PGPL#4. *Meet all ethical standards established for the discipline*.
The daily treatment of patients, including the safeguarding of protected health information and obtaining informed consent are evaluated with every patient. In addition, students engaged in research participate in the IRB process as outlined by the university.

Student assessment methods/measures of student learning related to the first student learning outcome objective is provided here as an **EXAMPLE** of the assessment process across the 2 year program. Each objective has multiple measures associated with the measure, similar to this example.

Objective	Assessment Mechanism	Results Achieved
Graduates will be able to demonstrate proficiency in the basic sciences and endodontic-related courses.	Written and oral assessments in the basic sciences and endodontic-related didactic courses.	All residents have received a letter grade of B or greater and Pass in P/NP in didactic and clinical courses.
	Clinical proficiency performances including quality of root-canal procedures as judged by the attending faculty.	All residents received a letter grade of B or better on clinical cases.
	Oral rationale of differential diagnosis (developed and presented for every patient)	Formative discussion with supervising specialist.
	Oral Case Defense	All residents successfully completed oral case defenses.
	American Board of Endodontics Exam	30 graduates have passed Part I of the Board; and 10 have passed Part II in the past seven years with 10 graduates becoming certified as Diplomates within that time (passed Part III).

The program director meets with each student every 6 weeks for case reviews and ABE preparation and case selection, which allows for additional opportunities to assess and discuss grades, cases, professional progress, and for early corrective action, when needed.

Name of Advanced or Specialty Program: PROSTHODONTICS

The dental specialty of Prosthodontics requires an additional 36 months of clinical and didactic training. Admission to the program is competitive, and successful applicants must have maintained a minimum of 3.0/4.0 grade point in their dental education program and have graduated in the upper third of their class; 6 students are accepted each year from more than 80 applicants.

As with most advanced patient care programs, the stated student outcomes incorporate many of the aspects of knowledge in the specialty with the clinical care of patients. By definition, the standard of care for patients includes the ethical practice of one's discipline.

Selected student learning objectives for Prosthodontics

Graduates will be able to:
1. demonstrate they have scientific knowledge and acquired diagnostic and therapeutic skills involved in clinical prosthodontics, maxillofacial prosthetics and implant dentistry.
2. apply this knowledge and these skills effectively to the diagnosis and treatment involved in clinical prosthodontics, maxillofacial prosthetics and implant dentistry.
3. communicate knowledge of prosthodontics, dental implants and related subjects to their patients and in an academic environment.
4. critically evaluate the dental literature, research and new treatment techniques.
5. demonstrate an understanding of the theory and methods of performing research.

Alignment with the Principles of Graduate and Professional Learning
The student objectives listed above align with the PGPLs and examples of how each principle might be conceptualized within the program are provided here.
PGPL #1 *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*
Students demonstrate the mastery of the knowledge and skills in prosthodontics during written and oral assessments within the program, demonstrate the integration and application of the knowledge and skills in daily patient care, and by successfully challenging the written, oral and patient-based examinations to become Board certified.
PGPL #2 *Communicate effectively with peers, clientele and the general public.*
Complex treatment plans require the ability to communicate with patients to determine their wants and needs, as well as the ability to share the expert's knowledge in a manner that is clear to the patient so that the patient is able to make an informed decision about their care. Treatment planning evaluations, faculty observation during patient care, oral defense of content knowledge and communication with peers via posters or presentations all demonstrate successful attainment of this PGL.
PGPL#3 *Think critically and creatively to improve practice in the field.*
Patients who seek the care of a prosthodontist generally have complex needs that go beyond the scope of the general dentist. The ability to devise novel applications of prosthetics is one example of students demonstrating their ability to improve practice in the field via critical evaluation and creative thinking.
PGPL#4. *Meet all ethical standards established for the discipline*.
The daily treatment of patients, including the safeguarding of protected health information and obtaining informed consent are evaluated with every patient. In addition, students engaged in research participate in the IRB process as outlined by the university.

Student assessment methods/measures of student learning related to the first student learning outcome objective is provided here as an **EXAMPLE** of the assessment process across the 3 year program. Each objective has multiple measures associated with the measure, similar to this example.

Desired Student Outcome	Assessment mechanisms/Measures	Findings
Demonstrates mastery of basic science, prosthodontics and maxillofacial prosthetic clinical sciences knowledge.	Written and oral examinations in didactic and clinical courses, including clinical proficiency exams.	All students have performed at or above a 3.0/4.0 in didactic and clinical courses.
	Faculty performance evaluations in various Treatment Planning Seminars & Prosthodontic Patient Presentation Seminar	All students have received a mean score of 3 (passing) or better on faculty evaluations
	Performance on American College of Prosthodontics Mock Board Examination	Over the past nine years, 46/53 graduate students have either increased or maintained their scores on the ACP Mock Board Examination. For each of the past three years, one student in the program received the honor of achieving the highest score in the country on this examination.
	Performance in MSD Qualifying Oral & Written Examinations	Since the last accreditation site visit, 53/53 graduate students have successfully passed the MSD Qualifying Oral & Written Examinations.4/53 required some remediation in certain areas before successful completion.
	Pass/Non Pass rate on American Board of Prosthodontics Examinations	19 of 53 graduates since 2007 have challenged the written portion of the American Board of Prosthodontics. All 19 of those were successful. 3 have successfully completed all portions of the Board and are now diplomats, the highest level of credentialing in the discipline.

Appendix 1

Example of an IUSD Clinical Competency Assessment Instrument

Outcomes of Treatment Competency Exam

Outcomes of Treatment Competency Exam

Eligibility:

Successful completion of T740B (Patient Management and Rounds Module), and T750A (Patient Management and Rounds Module), and current satisfactory enrollment in either T840A (Patient Management and Rounds Module) or T850A (Patient Management and Rounds Module).

Evaluators:

Comprehensive Care Clinic Directors.

Process:

During years 03 and 04 each student must present four case presentations total that assess their original treatment plan of a patient of record and determine whether treatment was properly sequenced, what positive and negative outcomes derived form actual treatment, and what maintenance and/or future treatment the patient might require. During the fourth year, the student chooses one of his/her case presentations to present as their Outcomes of Treatment Competency exam. This presentation is assessed by the clinic director, and must include consideration of relevant biobehavioral, biomedical and current literature related to patient treatment. If the student fails the competency exam, they are required to remediate and successfully repeat the competency exam to be cleared to graduate.

The competency results will be forwarded to the Clinical Services Manager for record-keeping.

INDIANA UNIVERSITY SCHOOL OF DENTISTRY
Outcomes of Treatment Competency
Dental Rounds Patient Case Presentation Assessment

Date _____ **Chart #** _____ **Patient Age** _____

Student _____ **Reviewer** _____

I. Review of Data Gathering

Instructions: Make a comment and check the appropriate answer for each of the criteria below or indicate N/A if not applicable to the student's patient case presentation.

A. Dental Record Assessment

Check all criteria if present or absent during the student's patient case presentation. If present, check if they are acceptable or not acceptable.

If not acceptable or not applicable, please comment.

	Present	Absent	Acceptable	Not Acceptable*	N/A*
Medical History	☐	☐	☐	☐	
Medical Consult	☐	☐	☐	☐	☐
Extra/Intra Oral Examination	☐	☐	☐	☐	
Dental Charting of Existing Conditions	☐	☐	☐	☐	
Periodontal Charting	☐	☐	☐	☐	
Treatment Plan	☐	☐	☐	☐	
Progress Notes	☐	☐	☐	☐	
Maintenance	☐	☐	☐	☐	
Caries Risk Assessment	☐	☐	☐	☐	☐

Assessment of Dental Record _____ **Acceptable** _____ **Not Acceptable***

*Comments: _____

_____

_____

B.   Supporting Items Assessment

Review all items presented/used during the student's patient case presentation.   If present, check if they are acceptable or not acceptable.

If not acceptable or not applicable, please comment.

	Present	**Absent**	**Acceptable**	**Not Acceptable***	**N/A**
Mounted Study Models	☐	☐	☐	☐	☐
Clinic Photos	☐	☐	☐	☐	☐
Appropriate use of multi-media/ visual aids	☐	☐	☐	☐	☐

Other: _____

Assessment of Supporting Items: _____ **Acceptable**   _____ **Not Acceptable***

***Comments:** _____

_____

_____

C.   Radiographic Assessment

Review of all radiographs taken or used by the student during the course of the patient's treatment by that student.

If not acceptable or not applicable, please comment.

1.   Sufficient films present to adequately diagnose and treatment plan the patient?

_____ **Yes**   _____ **No**   _____ **N/A***

***Comments:**_____

2.   Quality – Check problem areas if the student presenting the patient took the films.

☐   Insufficient Contrast

☐   Distortion (elongation, foreshortening)

☐   Cone Cut

☐   Overlapping Images

☐   Apex and Surrounding Bone Not Shown

☐   Poor Developing

☐   Other (specify) _____

Assessment of radiographs used by student to diagnose and treatment plan the patient.

_____ **Acceptable**   _____ **Not Acceptable***

***Comments:** _____

_____

_____

II. Assessment of Treatment

A. Completeness of Diagnosis

Check problems discussed by the student as part of the student's patient case presentation and make comments.

☐ Patient's Chief Complaint	☐ Problems of Space Maintenance in Children
☐ Caries / Caries Risk	☐ Malocclusion
☐ Missing Teeth	☐ Third Molar Extractions
☐ Periapical Pathology	☐ Oro / Facial Pathology
☐ Periodontal Status/History	☐ TMJ / Facial Pain
☐ Prognosis	

Assessment of Diagnosis: _____ **Acceptable** _____ **Not Acceptable***

*Comments: _____

_____

_____

B. Integration of Biomedical and Behavioral Considerations

Observe student's patient case presentation. Check areas discussed or considered in patient's treatment.

If not appropriately considered or discussed, please comment.

☐ Medical
- _____ Review of Medical History
- _____ Review of Systems
- _____ Surgical History
- _____ Review of Allergies

☐ Drug Related
- _____ Review of Medications
- _____ Use of Illicit Drugs

☐ Emotional
- _____ Psychotropic Drugs
- _____ Recent Change in Marital Status
- _____ Death in Family
- _____ Job Loss

☐ Lifestyle
- _____ Occupation
- _____ Family Situation
- _____ Hobbies
- _____ Smokes / Smokeless Tobacco

☐ Financial Considerations

☐ Other (specify) _____

Assessment of Biomedical and Behavioral Considerations: _____**Acceptable** _____**Not Acceptable***

*Comments: _____

_____

C. Appropriateness of Treatment
Observe student's patient case presentation. Check areas of treatment provided to the patient.

If not appropriately treated, please comment.

☐ Scientific evidence provided for treatment planning decisions

☐ Restorative   ☐ Orthodontics / Space Maintenance

☐ Endodontics   ☐ Removable Prosthodontics

☐ Oral Surgery   ☐ Fixed Prosthodontics

☐ Periodontics   ☐ Medication Prescribed

☐ Pulp Protection   ☐ Caries Management

☐ Preventive Care

☐ Other (specify) _____

Assessment of Appropriateness of Care: _____**Acceptable** _____**Not Acceptable***

*Comments: _____

_____

D. Logical Sequence of Treatment
Observe student's patient case presentation. You may also review the treatment history (progress notes) or treatment plan in the EHR if deemed necessary. Check areas that are judged to be in proper sequence.
If not appropriately sequenced, please comment.

☐ Pain Control   ☐ Surgical Treatment

☐ Pulpal Therapy   ☐ Preventive Services

☐ Space Maintenance   ☐ Periodontal Disease Control

☐ Caries Risk Management   ☐ Restoration of Missing Teeth

☐ Malocclusion   ☐ Other (specify) _____

☐ Restoration of Carious Lesions

Assessment of Logical Sequence of Treatment: _____**Acceptable** _____**Not Acceptable***

*Comments: _____

_____

E. Presentation Skills
Observe student's patient case presentation. Check area that are considered adequate, make comment.

☐ Used clear, easily understood visual aids   ☐ Presentation easy to understand

☐ Well prepared for case presentation   ☐ Demonstrated excellent presentation skills

☐ Was able to answer questions about the case   ☐ Best clinical evidence sources utilized

III. SUMMARY

Indicate in general the overall quality of the student's patient treatment presentation.

☐ **Exceeds Standards**   ☐ **Meets Standards**   ☐ **Fails to Meet Standards*** (Must Comment)

*Comments: