INDIANA UNIVERSITY

SCHOOL OF DENTISTRY

IUPUI

Indiana University School of Dentistry
Report to the IUPUI Program Review and Assessment Committee
Doctor of Dental Surgery
Advanced and Specialty Programs
2014

Indiana University School of Dentistry
DDS and Advanced Education Programs
PRAC Report, 2013-2014

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, followed by the Advanced Education programs. The Dental Hygiene report is submitted by the Dental Hygiene Program Director 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 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/).

Dental accreditation standards were extensively revised in 2013 and in September, 2013 IUSD became the first dental school in the country to be accredited using the revised standards. The site visit was highly successful; the school was fully accredited, with no reporting requirements in the DDS, DH or Advanced Specialty Programs.

Ongoing Institutional and Program Review
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 Boards
- Course syllabi
- Course/module review forms (completed by instructor)
- CoursEval reports (the electronic data base of student course evaluations)
- Student focus groups reports

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.

DDS Program-level Assessments, Recommendations and Actions

Dental accreditation standards mandate that the school have stated goals in the areas of teaching, research, patient care and service. At IUSD, each of the goals in these areas has multiple associated measures which are evaluated regularly and used for continuous improvement. Student outcomes are used as evidence of student learning and as indicators of the quality of aspects of the program from admissions through graduation.

These are examples of the institutional and program level assessment that is used to improve teaching and learning.

Example 1:
IUSD Teaching and Learning Program Goal:
- Enhance student learning and develop graduates who are highly competent practitioners.

Principle of Graduate and Professional Learning (PGPL) most closely associated with this program goal:
- *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*

Program-level Objective & Measure (tracked at the individual student level, as part of the IUSD IOA process):
- All students will pass National Dental Board Examination (NBDE) Part I by August prior to the beginning of D4.

Findings:
Board pass rates are tracked for each student and for the class as a whole. The class of 2015 had a number of students (17) who were not successful on their first attempt of Part I of the NBDE (a measure of student mastery of the basic and biomedical sciences taken after the first three semesters of dental school.) Based on interviews with the students who failed, the course directors of the biomedical sciences courses, and evaluation of the admissions files of these students, action plans were developed and implemented across the 13-14 academic year.

Program Changes Implemented:
1. Early identification of students having difficulty in basic sciences (D1) using ExamSoft. Students at risk meet with faculty in OAA to identify strategies for improvement.
- In the Fall of 2014, IUSD is delivering all written exams in ExamSoft . This allows us to run reports on students across all their courses, as a sort of dashboard for early identification. With early identification, the impact of D1/D4 mentor pairing is likely to be more effective.
2. D4/D1 mentoring partnerships set up for those students as part of early intervention.
- 2 first year students were paired with fourth year students for tutoring.
- 1 first year student was paired with a faculty mentor
3. IUSD Faculty Council adopted revised policies on Boards, with required threshold scores on Mock Boards as an additional requirement for student to be approved to schedule the Board exam.
4. A smaller number of faculty were assigned to advise all D1 students to facilitate greater support for students and increased continuity in the advising process.
- Beginning in fall 2014, faculty advising for DDS students was taken on by three faculty liaisons for each class.
5. The Curriculum and Assessment Committee is evaluating the impact of the standardized grading scale

used in the basic sciences courses in D1 and D2 to determine if a higher minimum passing score in these courses should be adopted. The hypothesis is that the current 70 minimum pass score may not be rigorous enough to ensure a level of mastery of the material that will translate into success on Part I of the Board.

Student- related outcomes of program changes:
The Class of 2016, the first class impacted by these program changes, had a NBDE Part I first time pass rate of 97/99. One of the two students who were not successful passed the Board on the second attempt. The other student is still preparing and using the Mock exams to evaluate his progress. He has been mentored by faculty who do Board remediation.

Example 2:
Program-level Assessment

At the end of AY 12-13, the Curriculum and Assessment Committee (CAC) had completed their four-year curriculum assessment cycle, having reviewed in depth all courses and modules in the predoctoral program. Based on their recommendations, the IUSD Faculty Council established an Academic Task Force charged with evaluating the IUSD course structure, the PBL curriculum and the academic calendar.

Evaluation topic	Problem	Recommendation	Status
Course structure	"Mega-courses" with multiple modules obscure student achievement or identification of problem areas & create problems with campus-level transcripts.	Create independent courses from the courses that were combined to create the Megacourse.	All didactic courses have been created based on discipline and content. Process of creating independent clinical sciences courses will begin in the Summer of 2015.
PBL curriculum	Student evaluation of courses indicates they would prefer less time devoted to PBL. Board scores and pass rates are problematic.	Refocus the intended outcomes of small group learning to have a more clinically focused outcome.	New courses created in D1 that permit the application of learning in a clinical setting beginning in the first semester of dental school. "Just in time" application of skills, such as collection of data and data entry into an electronic health record.
Academic Calendar	24 and 22 week didactic semesters leave little time for students and faculty to engage in service learning, research and other activities such as studying for Boards (students) or course planning and renewal (faculty).	Align start and stop dates with IUPUI calendar as much as possible. Restructure summer sessions to permit enrichment activities for both students and faculty.	Completed: As of Fall 2014, three years of the four in the DDS program begin on the same date in August with 17 week semesters for fall and spring. Summer sessions (11 weeks) do not contain didactic courses and are available for international service learning, Board preparation, etc.

STUDENT LEARNING OUTCOMES, DOCTOR OF DENTAL SURGERY

All dental education in the U.S. is competency based. 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. Students are tracked individually in their progress toward each of these competencies.

The IUSD Competencies for the DDS Program

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

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 • Daily rotation clinical grading • Lab examinations • OSCE • Rounds presentations • Written examinations	• Case-based assignments • Clinical competency assessments • Evidence-based literature critique • Lab examinations • OSCE • Written examinations • Written portfolio
Problem Solving	• Applied pt mgmt (GLA) activities • Daily comp care clinical grading • Daily rotation clinical grading • Lab examinations • OSCE • Reflective writing, including ethics and behavioral sciences • Rounds presentations • Written examinations	• Case-based exams • Clinical competency assessments • Lab examinations • OSCE • Reflective writing • Written Examinations
Clinical Reasoning	• Applied pt mgmt (GLA) activities • Daily comp care clinical grading • Daily rotation clinical grading • Lab examinations • OSCE • Reflective writing • Rounds presentations • TJE assessment • Written examinations • Annotated Bibliography Assignments	• Case-based exams • Clinical competency assessments • Lab examinations • Reflective writing • Written Examinations

Professionalism	• Applied pt mgmt (GLA) activities
	  Clinical professionalism 360 evals
	• Daily comp care clinical grading
	• Daily rotation clinical grading
	  Ethical sensitivity assessment
	• OSCE
	• Reflective writing
	• Rounds presentations
	• TJE assessment
	• Written examinations
		• Case-based exams
		• Clinical competency assessments
		• OSCE
		• Reflective writing
		• Written examinations

TABLE 1. Formative and Summative Assessments in Pre-doctoral Dental Education		
Assessment Area	**Formative Assessments**	**Summative Assessments**
Ethical Decision-making	• Applied pt mgmt (GLA) activities Clinical professionalism 360 evals • Daily comp care clinical grading • Daily rotation clinical grading • Ethical sensitivity assessment • OSCE • Reflective writing • Rounds presentations • Written examinations	• Case-based exams • Clinical competency assessments • OSCE • Reflective writing • Written examinations
Communication Skills	• Clinical professionalism 360 evals • Daily comp care clinical grading • Daily 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, as with many patient-centered disciplines, 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 crown is done by direct evaluation of these skills (diagnosing, treatment planning, clinically preparing and evaluating the finished product of a crown) in a patient's mouth. Each clinical assessment, developed by the related disciplines, is used as a direct measure of at least one IUSD Competency, and most, if not all map to all four of the IUPUI PGPLs.   Students who are not successful are remediated as needed, given additional opportunities to master the skills and then must attempt the competency again. Students are not eligible to graduate until they have demonstrated competence for all 20 Institutional Competencies.

How are student outcomes assessments used?

Student outcomes for each of the 20 IUSD Competencies are continuously tracked, are compiled annually and used by:
1. the IUSD Progress Committee to certify students are prepared for the independent practice of dentistry prior to approving the student for graduation.
2. the Institutional Outcomes Assessment Committee to evaluate the effectiveness of the program and curriculum.
3. the Curriculum and Assessment Committee for ongoing curricular review.
4. the individual Department, Discipline, Course and Module faculty to evaluate curriculum and classroom assessment, competency measures, and content.

Examples of the results from direct and indirect student measures: Outcomes of Treatment Competency and Evidence-based Dentistry.

The Outcomes of Treatment Clinical Competency is a capstone assessment that incorporates the Common Standards Assessments (ethical treatment of the patient, professionalism, infection control) with discipline-specific skills. This clinical competency provides the capstone evidence for a student's demonstration of IUSD Competency #19: Graduates must be competent in 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. It maps to all four of the IUPUI Principles of Graduate and Professional Learning.

This Competency assessment takes place in the D4 year. Students present to their clinic director and peers the summary of a patient for whom they have completed substantial care, and explain their treatment decisions and the evaluation of the patient's outcomes. In 2013, a review of the previous student presentations for this competency resulted in the revision of the assessment instrument to include a more direct measure of the student's use of best evidence in patient care. The new format was implemented in the Clinical Rounds setting and was required for students graduating in the class of 2014.

While one of the intents of the revised instrument was to require students to more clearly demonstrate their use of "best evidence," it was the feeling of Clinic Directors and the Curriculum Committee that the instrument might not be sufficient to evaluate competence in this area. Student exit survey data supported this: the majority of students felt "somewhat prepared" to implement the key elements of evidence-based dental practice.

In reviewing how the introductory concepts of EBD are presented, how the content is reinforced and evaluated across the curriculum and how it is applied in the clinical setting, faculty determined that a more purposeful, curriculum wide plan for the integration and scaffolding of EBD content was needed.

A proposal was prepared and in 2014 IUSD was awarded a Curriculum Enhancement Grant by the IUPUI Center for Teaching and Learning. This $15,000 grant is focused on strengthening the application of evidence-based patient care (EBD) in the clinical curriculum. A group of eight members of the faculty who have key teaching positions across the four years of the DDS program, along with staff in the Office of Academic Affairs, have evaluated the EBD curriculum and identified points across all four years where the content can be reinforced and applied. New assessment instruments have been developed that include the development of a researchable clinical question, demonstration of search strategy skills, and the demonstration of the critical assessment of literature through annotated bibliography assignments Clinical faculty, trained as EBD champions by the American Dental Association, are included in the group, and are key to the application in the clinical setting. The students ' perception of the knowledge skills and attitudes associated with the application of evidence-based patient care is being surveyed in each year of the program using a previously validated instrument (KACE survey) to attempt to measure the impact of the curricular changes.

At the conclusion of the fall term 2014, student and faculty focus groups will be held to determine the early responses to the curricular changes focused on EBD. The full implementation and impact will require four years (one entire class followed through the program), but year by year outcomes have been established for assessing progress. In the spring term 2015, a pilot group of senior students will be invited to use the scaffolded rubric for evaluating their use of best evidence in their Outcomes of

Treatment Clinical Competency by submitting a clinical question, search strategy, annotated bibliography and clinical application paragraph.

Summary

Developing highly competent practitioners is a stated goal of the school.   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 program, the measurement instruments used in student evaluation and the outcomes of those assessments to ensure that there is meaningful, ongoing evaluation of student learning.

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. The MSD requires that a student already has a DDS or DMD. Students may also enroll in the university's graduate school for a MS in dental materials or preventive dentistry or for a PhD. in dental science, preventive dentistry, oral biology or dental biomaterials. These programs do not necessarily require a previous dental degree. Of the programs available, the Commission on Dental Accreditation (CODA) accredits Pediatric Dentistry, Prosthodontics, Endodontics, Periodontics, Oral and Maxillofacial Surgery and Orthodontics; these programs participated in the 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 and Oral Biology. In each program, students must demonstrate mastery of these 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.

Beyond those 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.

Only the CODA accredited clinical specialties are included in this report. Oral Surgery and Prosthodontics will be submitted under separate cover .

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

Name of Advanced or Specialty Program: ENDODONTICS

The dental specialty of Endodontics requires an additional 24 months of clinical and didactic training. The IUSD Graduate Endodontics Program was established in 1959, and since that time had graduated 155 students, approximately 25% of whom are Board Certified. 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 2014, 55 students applied to the program, three students were selected.

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.

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 endodontics resident must conduct original research that must be presented as either a thesis.

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.	All residents receive 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	In the past seven years, twenty-seven graduates have passed Part I of the Board; seven have passed Part II and seven 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 an discuss grades, cases, professional progress, etc.

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. The maximum number of students enrolled in all three years of the program cannot exceed 15. In 2014, 3 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 PGL.
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.
	AAP In-Service Exam (ISE)	Since 2006, 14/24 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 90%.)
	American Board of Periodontology Qualifying and Oral Exams	Since 2010, 19/19 of the graduated students have passed the ABP Qualifying Exam. Since 2010, 17/20 graduates have passed the ABP Oral Exam.
	Faculty performance evaluations in Advanced Periodontal Treatment Planning Seminars	All students in the class of 2014 received a mean score of 3 (passing) or better on faculty evaluations
	Case Defense examinations	Since 2010, all 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	30/30 of the most recent graduate students have successfully passed the MSD Qualifying Oral & Written Examinations. 4/30 students required some remediation in certain areas before successful completion.

Name of Advanced or Specialty Program: PEDIATRIC DENTISTRY

The dental specialty of Pediatric Dentistry 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. In 2014, 87 applicants competed for 7 openings.

Pediatric Dentistry evaluates student progress against program benchmarks.   It is acknowledged that this does not fit perfectly with the requested model of program assessment at IUPUI, but is none-the-less the way the outcomes measures are constructed for this program based in Riley Children's Hospital.

Selected example outcome objectives for Pediatric Dentistry include:

Outcome Objective # 1.
 All Pediatric Dentistry Graduate Students will follow the Indiana University School of Dentistry Graduate Student Manual Policy on student progress, including grades and requirements for graduation.
Related Graduate PUL: *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*
Assessment Mechanism: Gradepoint average in graduate courses, as determined by written and clinical assessments.
Findings: Since 1978, all residents have maintained the required 3.0/4.0.

Outcome objective #2.
All graduate students will pass their oral and written qualifying exams prior to entering their second year of residency.
Related Graduate PUL: *Demonstrate the knowledge and skills needed to meet disciplinary standards of performance.*
Assessment Mechanism: Oral and Written Qualifying exams.
Findings: For the last five years, all students have passed their examinations. Pass rates on the written American Board of Pediatric Dentistry for the last five years: 31/32 first time pass; 1/32 second attempt pass.

Required Evaluations of Residents:

Evaluation of all residents in IU hospital-based programs is required annually, and is done using   a common comprehensive evaluation instrument that includes didactic, clinical and interpersonal skills. The IUSD Pediatric Dentistry Program conducts these evaluations twice a year, rather than once a year. Each student meets independently with the Program Director to address identified areas for improvement. Follow up evaluations on the problem areas may be conducted as soon as 3 months if the Program Director so determines.

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

<u>Orthodontics</u>
Orthodontics is a highly competitive program that admits 7 students each year from the approximately 150 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 Improvement & Action Steps	Results Achieved
#1.Demonstrate the knowledge and skills needed to meet <u>disciplinary standards of performance</u>. **#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.	No changes for 2011-2012. In past 4 years 2 students in combined Phd./Ortho or Perio/Ortho joint degree failed Ortho courses.	All ortho residents successfully completed Core classes. Suspended joint degree program. Students encouraged to complete first program then apply to Ortho.
#3. Think critically and creatively to improve practice in the field.	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.		2012 all students passed
#4. Meet all ethical standards established for the discipline.	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.	One student in 2012 identified with significant deficits offered opportunity to repeat the year

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 40 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.	Numbers of screenings, records and new patient starts increased in AY 2011-2012 as evidenced by Clinical Production reports, which should translate to increased access to a variety of patients for student learning opportunities.
	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 1 have passed this Exam. The 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 <u>disciplinary standards of performance</u>. **#2. Communicate effectively with peers, clientele and the general public.**	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.	Evaluation of patient case complexity, number of patient cases started, number of patient cases transferred, number of patient cases completed.	Continue emphasis on care for those with special needs and craniofacial anomalies.
#4. Meet all ethical standards established for the discipline.	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		70% of responding graduates involved in community activities, 23% on a weekly basis. 96% provide free of reduced cost treatment for some patients. 60% see patients with special needs or craniofacial anomalies