



INDIANA UNIVERSITY

SCHOOL OF DENTISTRY

Annual Assessment Report to the IUPUI Program Review and Assessment Committee

Doctor of Dental Surgery Program

Academic Year 2020-21

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Introduction

Founded as the Indiana Dental College in 1879, the Indiana University School of Dentistry (IUSD) is the only dental school in the state. The concentration of its academic programs is located on the IUPUI campus. The Mission of the Indiana University School of Dentistry is to advance the oral and systemic health of the people of the state of Indiana and globally through excellence in teaching and learning, research and creative activities, patient care, civic engagement and service, with a Vision to be a global leader, advancing oral health as an essential component of overall health, through excellence and innovation in education, patient care, research, and community engagement and service, in Indiana and around the world.

At the IUPUI campus, in addition to the Doctor of Dental Surgery (DDS) degree, academic programs include undergraduate allied dental degrees in dental assisting and dental hygiene. Advanced dental education programs include seven discipline focused master's degree majors in dentistry and a Certificate in Oral and Maxillofacial Surgery. Graduates of international dentist programs who are seeking a license to practice in the U.S. are eligible to apply to the International Dentist Program (IDP), which awards a DDS degree. Lastly, two dual degree programs are offered, a DDS and MPH (MPH awarded from the IU Fairbanks School of Public Health) and a DDS and PhD in Dental Sciences.

On July 1, 2018, the IU Fort Wayne undergraduate dental education programs (dental hygiene, dental assisting, and dental laboratory technology) officially became a part of the IU School of Dentistry. At this time, the curricula of these programs are not integrated and are evaluated independently.

This PRAC Annual Assessment Report offers a program review for the IU School of Dentistry DDS program only. The IUSD undergraduate and advanced dental education programs are reported independently.

The DDS program is a four-year academic curriculum requiring 109 courses and 165.5 credit hours. Graduates of the DDS degree program will be ready for entry-level practice in general dentistry and competent to provide safe and effective patient care through demonstrated competency of the [program learning outcomes](#).

In September of 2021, the dental education programs of the IU School of Dentistry were evaluated by the Commission on Dental Accreditation (CODA), whereby all programs are required to demonstrate programmatic achievement of CODA Standards. The DDS program received no recommendations for program improvement and five program strengths, which included: (1) data analysis, (2) student learning outcomes evaluation, (3) curriculum assessment and management plan, (4) integration of biomedical sciences and clinical care, (5) support of faculty development within the school and across campus. All IUSD programs are on a seven-year accreditation cycle except for the Oral and Maxillofacial Surgery program, which is on a five-year cycle.

Overview of Assessment Activities

The United States Department of Education recognizes CODA as the sole accrediting body, responsible for programmatic assessment of quality and performance of dental, allied dental and advanced dental educational programs. Programmatic standards set by CODA, the Accreditation Standards for Dental Education, set minimum acceptable requirements but allow institutions flexibility to determine how to meet them through a competency-based education model aligned with dental education, patient care, research and service missions. The IUSD Institutional Competencies for the Dental Graduate, which are reviewed and approved by the IUSD Curriculum Committee and Faculty Council, are modeled after the CODA standards.

Within Indiana University School of Dentistry, the IUSD Institutional Outcomes Assessment (IOA) committee, DDS Curriculum and Assessment Committee (CAC), and DDS Student Progress Committee are key IUSD committees charged with the ongoing evaluation of the DDS program, curriculum and individual student progress, respectively. The IUSD Office of Education and Academic Affairs provides administrative guidance for these committees and facilitates the routing of information to the appropriate faculty member, standing committees of the Faculty Council or administrative office in order to identify areas of strengths and opportunities for improvement.

Institutional Outcomes Assessment

Ongoing assessment of IUSD's progress toward its stated mission, vision and goals is overseen by the Executive Committee of the Faculty Council and the Institutional Outcomes Assessment (IOA) committee, a committee appointed by the Dean. Strategic goals encapsulate identified priority areas that center the institutional work and resources to fulfill its mission, align with the IUPUI campus, and contribute to Indiana and globally. A schedule exists to review these three items every five years at a minimum, for continued authenticity. However, any faculty member or student can make suggestions for revisions at any time. The most recent review and approval of the IUSD Goals by Faculty Council occurred in 2017, and the IOA Committee is undergoing a process to review, renew and revise our goals, objectives, metrics, and targets. IUSD Institutional Goals address 1) Teaching and learning, 2) Research and creative activities, 3) Patient care and 4) Civic engagement and service. The Institutional Outcomes Assessment Plan developed by academic and clinical deans and relevant faculty committees, identifies mission directed objectives and measures for assessment at both the school and DDS program levels. The IOA committee is chaired by the dean, managed by the assistant dean of curriculum development and assessment and guided by lead members of various constituencies. The committee members work in concert with the Faculty Council to define programmatic objectives reflective of strategic planning, identify meaningful measures, and assess the data to modify and improve the overall program. Eighteen objectives were assessed for Academic Year 2020-21 across the four broad domains. Our outcomes assessment process (Appendix A) informs the ongoing cycle of evaluating the objectives, performance measures and outcomes data to identify action plans for program improvement. Overall responsibility for the operational implementation and oversight of progress toward the mission and goals of the school rests with the Curriculum and Assessment and Quality Improvement committees.

Curriculum Management Plan

For the continuing oversight and assessment of the DDS curriculum, the DDS Curriculum and Assessment Committee (CAC) implements a multi-faceted review process. The Curriculum Management Plan (CMP) was approved by the Faculty Council in 1999, and serves as the foundation for IUSD's ongoing curricular review process (CMP Process Flowchart, Appendix B; Course Review by Course Director Form, Appendix C; CAC Course Review Form, Appendix D). The Office of Education and Academic Affairs (OEAA) houses the Associate Dean for Education and Academic Affairs who has oversight of the process and ensures that the findings and recommendations of the CAC are routed properly for study, action and follow-up. The Assistant Dean of Curriculum Development and Assessment in the OEAA provides day-to-day oversight of the process and supports the CAC by compiling and synthesizing review data, routing recommendations to the appropriate faculty, and assessing outcomes of curricular change.

The IUSD process of curricular review and assessment is ongoing, with a new portion of the DDS program selected for review each academic year. The process involves input from faculty, students, and administrators, which includes the following data: course directors' course review reports, student evaluations, student focus group reports, and course materials such as syllabi and lecture and/or topics outlines. If they wish, instructors

may provide exams, cases, or other materials. Additional data reviewed as part of the school's CMP are national board pass rates, clinical licensure pass rates, senior student exit surveys, and outcomes of competency assessments.

The OEAA and/or the CAC identify areas for curricular review, and the OEAA collects, compiles, and summarizes review data. Members of the CAC are responsible for reviewing courses and/or program years as part of their service to the committee. From this review, suggestions for improvement or revision are generated and appropriate action plans are outlined. Key to an effective CMP is the linking of action steps with the appropriate person (course director, department or division director, administrative office, or dean) for oversight. Periodically, the action plans are reviewed by the CAC and the OEAA, and progress toward the intended outcomes are documented.

Assessment of Student Progress

The DDS Progress Committee meets each semester, or more frequently as needed, to address the needs of students in the program. Individual student cases are presented for discussion. In addition to elected representatives, those individuals included in the discussion (as needed) are the following: course directors, student advocates, clinic directors of students under discussion, the Deans of Academic Programs, Student and Clinical Affairs and other faculty who would have knowledge about a particular student's situation. Progress Committee members are charged with making decisions concerning student promotions and reporting these outcomes to the Faculty Council. The findings of the DDS Progress Committee are evaluated by the IOA Committee through measures that include D1-D2 promotion and graduation rates.

Assessment Data

Evidence of student learning and development is captured and evaluated at both program and student levels. Direct measures of student learning outcomes are continuously tracked and compiled annually for use by faculty standing committees in planning and decision-making. Other student measures, including focus group data and senior exit surveys, inform program development, benchmarking, and curricular and advising assessment activities. The following data are reviewed annually, or more often, as part of our ongoing assessment activities:

- Analysis of student performance in courses, clinics, discipline competency assessments, and on national written and regional clinical boards
- D1 to D2 retention rate
- On-time graduation rate
- Outcomes of patient care
- Patient opinion surveys
- IUSD Standards of Care audit
- Course syllabi (reviewed against IUSD DDS approved syllabus template and University mandated policies)
- Course review reports (completed by course directors)
- Course evaluation surveys
- Student focus groups reports
- Senior exit interview surveys (IUSD and American Dental Education Association)

Program Learning Outcomes

To demonstrate successful completion of the curriculum, IUSD has established twenty (20) Institutional

Competency Statements for the Dental Graduate, which each student must achieve to be deemed competent for the beginning practice of general dentistry and to be eligible for graduation. Competency consists of complex behaviors or abilities that include knowledge, experience, critical thinking and problem-solving skills, professionalism, ethical values, and technical and procedural skills. The IUSD Institutional Competency Statements have been developed by the discipline, or disciplines working together, to measure student development across the program.

Most of the IUSD Institutional Competency Statements map to all four of the IUPUI Principles of Graduate and Professional Learning (PGPL):

- PGPL 1: Demonstrating mastery of the knowledge and skills expected for the degree and for professionalism and success in the field
- PGPL 2: Thinking critically, applying good judgment in professional and personal situations
- PGPL 3: Communicating effectively to others in the field and to the general public
- PGPL 4: Behaving in an ethical way both professionally and personally

The IUSD Institutional Competency Statements for the Dental Graduate and corresponding PGPLs are listed below:

The IUSD graduate must be competent in:

- patient assessment, diagnosis, and referral (PGPL 1,2,3,4)
- treatment planning (PGPL 1,2,3,4)
- 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)
- control of pain and anxiety, clinical pharmacology, and management of related problems, including prescribing practices and substance use disorder (PGPL 1,2,3,4)
- prevention and management of dental and medical emergencies (PGPL 1,2,3,4)
- detection, diagnosis, risk assessment, prevention, and management of dental caries (PGPL 1,2,3,4)
- diagnosis and restoration of defective teeth to form, function and esthetics (PGPL 1,2,3,4)
- replacement of teeth including fixed, removable and dental implant prosthodontic therapies (PGPL 1,2,3,4)
- diagnosis and management of periodontal disorders (PGPL 1,2,3,4)
- prevention, diagnosis and management of pulpal and periradicular diseases (PGPL 1,2,3,4)
- diagnosis and management of oral mucosal and osseous disorders (PGPL 1,2,3,4)
- collecting and assessing diagnostic information to plan for and perform uncomplicated oral surgical procedures (PGPL 1,2,3,4)
- recognizing and diagnosing malocclusion and space management needs (PGPL 1,2,3,4)
- discerning and managing ethical issues and problems in dental practice (PGPL 1,2,3,4)
- understanding and application of the appropriate codes, rules, laws and regulations that govern dental practice (PGPL 1,2,3,4)
- behavioral patient management and interpersonal skills (PGPL 1,2,3,4)
- understanding the fundamental elements of managing a dental practice (PGPL 1,2,3,4)
- 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)
- 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)
- recognizing the role of lifelong learning and self-assessment to maintain competency (PGPL 1,2,4)

Assessment Measures

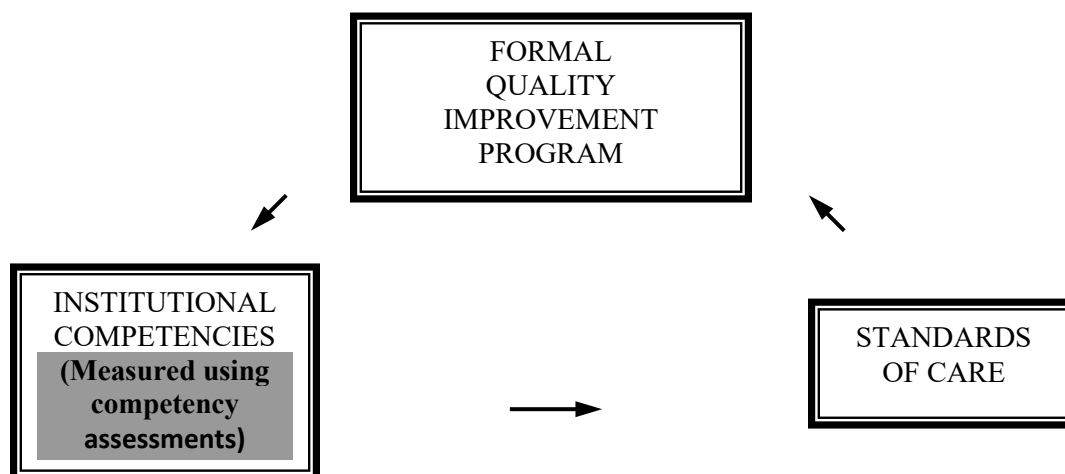
Direct Measures of Student Learning

The assessments used to evaluate student competence are outlined in the IUSD Competency Assessment Manual, which serves to guide faculty and students in the preparation for, and evaluation of, student competence. Each assessment is used as a direct measure of at least one of the twenty IUSD Institutional Competency Statements for the Dental Graduate. Students are tracked individually in their progress toward each of these competency statements (program learning outcomes). Student preparation for and evaluation of competence occurs as an integrated part of all aspects of the DDS program with multiple measures of student mastery of knowledge, skills, behaviors, and attitudes.

Rationale for Competency Assessments

The Competency Assessments are the direct measure used to assess the desired outcomes for students based on the parameters of the IUSD Institutional Competency Statements for the Dental Graduate. The Institutional Competency Statements are part of a triad of specifications that, along with the IUSD Standards of Care and a sound Quality Improvement Program, create a framework that fosters the development of competent beginning practitioners of dentistry. The Standards describe the proper care for the patient, the Institutional Competency Statements establish those skills expected of our graduates, and the Quality Improvement Program provides the mechanism that assures that the Standards are met.

Figure 1. Flow Chart for Institutional Reporting of Competency Outcomes



All IUSD students must successfully complete the competency assessments as a collective measure of overall competence. The discipline-specific faculty review the outcomes for their competency assessments and determine if any changes in the assessments are necessary, or, whether any didactic or clinical courses require evaluation and/or change. Any recommendations that involve course changes regarding time or curriculum placement are submitted to the DDS Curriculum and Assessment Committee. This plan follows the generation of outcomes through to their use in analyzing the curriculum to prepare graduates for beginning independent practice. The competency assessments are mapped to the IUSD institutional Competency Statements in the

table below.

Table 1. IUSD Institutional (Predoctoral Program) Competency Statements Mapped to Competency Assessments (direct measures)

| IUSD Institutional Competency Statements <i>Graduates must be competent in:</i> | Competency Assessments |
|--|--|
| 1. patient assessment, diagnosis, and referral | <ul style="list-style-type: none"> • Caries Diagnosis Risk Assessment and Management • Dental Emergency Clinical • Endodontic Clinical • Endodontic Emergency • Operative Dentistry • Oral and Maxillofacial Surgery • Oral Diagnosis and Treatment Planning Part I and Part II • Oral Mucosal and Osseous Disorders • Orthodontic Malocclusion • Outcomes of Treatment • Patients with Special Needs • Pediatric Behavior Guidance • Pediatric Comprehensive Patient Management • Periodontics D3-Diagnosis and Management of a Gingivitis or Successfully Stable Periodontitis Case • Periodontics D4-Comprehensive Treatment Planning and Management of a Stage-Grade Periodontitis Case • Radiology • Readiness to Practice • Screening and Risk Assessment for Head and Neck Cancer |

| IUSD Institutional Competency Statements <i>Graduates must be competent in:</i> | Competency Assessments |
|---|---|
| <p>2. treatment planning</p> | <ul style="list-style-type: none"> • Caries Diagnosis Risk Assessment and Management • Endodontic Clinical • Endodontic Emergency • Operative Dentistry • Oral and Maxillofacial Surgery • Oral Diagnosis and Treatment Planning Part I and Part II • Oral Mucosal and Osseous Disorders • Orthodontic Malocclusion • Outcomes of Treatment • Pediatric Comprehensive Patient Management • Periodontics D3-Diagnosis and Management of a Gingivitis or Successfully Stable Periodontitis Case • Periodontics D4-Comprehensive Treatment Planning and Management of a Stage-Grade Periodontitis Case • Prosthodontic Restoration of Teeth-Crown PAC • Prosthodontic Restoration of Teeth-Crown VPAC • Prosthodontic Replacement of Teeth-Complete Denture PAC • Prosthodontic Replacement of Teeth Complete Denture VPAC • Prosthodontic Replacement of Teeth-Fixed Bridge SPAC • Prosthodontic Replacement of Teeth-Implant PAC (2021) • Prosthodontic Replacement of Teeth-Implant SPAC (2022) • Prosthodontic Replacement of Teeth-Implant VPAC • Prosthodontic Replacement of Teeth-Removable Partial Denture PAC • Prosthodontic Replacement of Teeth-Removable Partial Denture VPAC • Readiness to Practice • Screening and Risk Assessment for Head and Neck Cancer |
| <p>3. communicating and collaborating with individuals and groups to prevent oral disease and promote oral and general health in the community</p> | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part I • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part II • Caries Diagnosis Risk Assessment and Management • Patients with Special Needs • Pediatric Comprehensive Patient Management • Readiness to Practice • Standardized Patient Simulation |

| IUSD Institutional Competency Statements <i>Graduates must be competent in:</i> | Competency Assessments |
|---|--|
| 4. control of pain and anxiety, clinical pharmacology, and management of related problems, including prescribing practices and substance use disorders | <ul style="list-style-type: none"> • Dental Emergency Clinical • Endodontic Clinical • Endodontic Emergency • Operative Dentistry • Oral and Maxillofacial Surgery • Pediatric Comprehensive Patient Management • Prosthodontic Restoration of Teeth-Crown PAC • Readiness to Practice • Screening and Risk Assessment for Head and Neck Cancer |
| 5. prevention and management of dental and medical emergencies | <ul style="list-style-type: none"> • Dental Emergency Clinical • Endodontic Clinical • Endodontic Emergency • Oral Diagnosis and Treatment Planning Part I and Part II • Pediatric Comprehensive Patient Management • Readiness to Practice • Screening and Risk Assessment for Head and Neck Cancer |
| 6. detection, diagnosis, risk assessment, prevention, and management of dental caries | <ul style="list-style-type: none"> • Caries Diagnosis Risk Assessment and Management • Operative Dentistry • Oral Diagnosis and Treatment Planning Part I and Part II • Pediatric Comprehensive Patient Management • Readiness to Practice |
| 7. diagnosis and restoration of defective teeth to form, function and esthetics | <ul style="list-style-type: none"> • Operative Dentistry • Pediatric Case Selection & Space Maintainer • Pediatric Comprehensive Patient Management • Pediatric Operative Class II Restoration • Pediatric Operative Stainless Steel Crown • Pediatric Pulpotomy • Prosthodontic Restoration of Teeth-Crown PAC • Prosthodontic Restoration of Teeth-Crown VPAC • Prosthodontic Replacement of Teeth-Implant SPAC (2022) • Prosthodontic Replacement of Teeth-Implant VPAC |
| 8. replacement of teeth including fixed, removable and dental implant prosthodontic therapies | <ul style="list-style-type: none"> • Prosthodontic Replacement of Teeth-Complete Denture PAC • Prosthodontic Replacement of Teeth Complete Denture VPAC • Prosthodontic Replacement of Teeth-Fixed Bridge SPAC • Prosthodontic Replacement of Teeth-Implant PAC (2021) • Prosthodontic Replacement of Teeth-Implant SPAC (2022) • Prosthodontic Replacement of Teeth-Implant VPAC • Prosthodontic Replacement of Teeth-Removable Partial Denture PAC • Prosthodontic Replacement of Teeth-Removable Partial Denture VPAC |

| IUSD Institutional Competency Statements <i>Graduates must be competent in:</i> | Competency Assessments |
|--|---|
| 9. diagnosis and management of periodontal disorders | <ul style="list-style-type: none"> • Oral Diagnosis and Treatment Planning Part I and Part II • Pediatric Comprehensive Patient Management • Periodontics D3-Diagnosis and Management of a Gingivitis or Successfully Stable Periodontitis Case • Periodontics D4-Comprehensive Treatment Planning and Management of a Stage-Grade Periodontitis Case • Readiness to Practice |
| 10. prevention, diagnosis and management of pulpal and periradicular diseases | <ul style="list-style-type: none"> • Endodontic Clinical • Endodontic Emergency • Pediatric Comprehensive Patient Management • Radiology • Readiness to Practice • Screening and Risk Assessment for Head and Neck Cancer |
| 11. diagnosis and management of oral mucosal and osseous disorders | <ul style="list-style-type: none"> • Oral Diagnosis and Treatment Planning Part I and Part II • Oral Mucosal and Osseous Disorders • Readiness to Practice |
| 12. collecting and assessing diagnostic information to plan for and perform uncomplicated oral surgical procedures | <ul style="list-style-type: none"> • Oral and Maxillofacial Surgery • Oral Diagnosis and Treatment Planning Part I and Part II • Pediatric Comprehensive Patient Management • Readiness to Practice |
| 13. recognizing and diagnosing malocclusion and space management needs | <ul style="list-style-type: none"> • Orthodontic Malocclusion • Pediatric Case Selection & Space Maintainer |
| 14. discerning and managing ethical issues and problems in dental practice | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part I • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part II • Readiness to Practice • Standardized Patient Simulation |
| 15. understanding and application of the appropriate codes, rules, laws and regulations that govern dental practice | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Outcomes of Treatment • Practice Administration |
| 16. behavioral patient management and interpersonal skills | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part I • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part II • Pediatric Behavior Guidance • Pediatric Comprehensive Patient Management • Readiness to Practice • Standardized Patient Simulation |
| 17. understanding the fundamental elements of managing a dental practice | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Practice Administration |

| IUSD Institutional Competency Statements <i>Graduates must be competent in:</i> | Competency Assessments |
|---|--|
| 18. performing and supervising infection control procedures to prevent transmission of infectious diseases to patients, the dentist, the staff and dental laboratory technicians | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Endodontic Clinical • Oral and Maxillofacial Surgery • Readiness to Practice |
| 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 | <ul style="list-style-type: none"> • Standards Common to All Clinical Competency Assessments • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part I • Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part II • Caries Diagnosis Risk Assessment and Management • Critical Thinking and Evidence-Based Dentistry • Outcomes of Treatment • Standardized Patient Simulation |
| 20. recognizing the role of lifelong learning and self-assessment to maintain competency | <ul style="list-style-type: none"> • Caries Diagnosis Risk Assessment and Management • Dental Emergency Clinical • Endodontic Clinical • Operative Dentistry • Oral and Maxillofacial Surgery • Oral Diagnosis and Treatment Planning Part I and Part II • Outcomes of Treatment • Pediatric Behavior Guidance • Pediatric Case Selection & Space Maintainer • Pediatric Operative Class II Restoration • Pediatric Operative Stainless Steel Crown • Pediatric Pulpotomy • Periodontics D3-Diagnosis and Management of a Gingivitis or Successfully Stable Periodontitis Case • Periodontics D4-Comprehensive Treatment Planning and Management of a Stage-Grade Periodontitis Case • Prosthodontic Restoration of Teeth-Crown PAC • Prosthodontic Replacement of Teeth-Complete Denture PAC • Prosthodontic Replacement of Teeth-Removable Partial Denture PAC • Radiology |

In dentistry, clinical assessments are highly authentic and replicate the work required of a general dentist. As an example, a student's ability to diagnose, treatment plan, clinically prepare and evaluate the completed treatment 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. Critical errors are incorporated into clinical assessments and result in an unsuccessful competency assessment. Students who are not successful on competency assessments are remediated as needed, given additional opportunities to master the skills, and then must attempt the assessment again. In addition to the successful completion of the required courses in the curriculum, students are not eligible to graduate until they have demonstrated achievement for all 20 IUSD Institutional Competencies.

In addition to the competency assessments, formative assessments, which measure student development toward achieving the IUSD Institutional Competency Statements, are embedded in all DDS courses. Types of formative and summative assessments are listed below:

Table 2. Formative Assessment Methods

| Type | Description | Acronym |
|---|---|---------|
| CATS/PICO | Assessment formats include Critically Appraised Topic Summaries (CATS) and Patient/Problem, Intervention, Comparison, Outcome (PICO) questions | PICO |
| Faculty Assessment by Observation: Longitudinal/Global | Longitudinal/global evaluation over extended periods | FA-LG |
| Faculty Assessment by Observation: Daily Clinical Evaluation | Formative assessment of procedural independence, professionalism, and infection control during discrete patient-care experience | FA-DCE |
| Faculty Assessment by Observation: Clinical Competency Assessment | High stakes patient-based assessment requiring students to perform independently (5 on the IUSD Procedural Independence Scale) | FA-CCA |
| Independent Assessment: Standardized Patient | Simulation assessment using standardized patient methods | IA-SP |
| Independent Assessment: Peer Assessment | Critical assessment of performance conducted by peer colleagues | IA-PA |
| OSCE | Objective Structured Clinical Examination | OSCE |
| Self-Assessment | Critical assessment of one's own performance and reflection on ways to enhance subsequent performance with feedback from external sources that may need to be reconciled with self-appraisal; includes standard rubrics | SELF |
| Simulation Assessment | Assessment formats include Virtual Reality, computer-based clinical scenarios, Typodont and peer patient | SIM-A |
| Work Sample | Assessment format includes portfolios and record reviews, chart simulated review, and case presentations | WS |
| Written Assessment | Assessment formats include multiple choice questions, short answer, structured essay, and research reports | WA |

Indirect Measures of Student Learning

Indirect measures are 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, course sequencing, applicability of content in courses and the effectiveness of new curricular components incorporated into the program. IUSD also has a student-run Student Curriculum and Assessment Committee (SCAC) that meets regularly and provides input directly to the DDS CAC. Each DDS class has a non-voting representative on the CAC to provide the students with a voice on the committee.

Each DDS student completes the IUSD Senior Exit Interview Survey, and all students have the opportunity to complete the American Dental Education Association (ADEA) Senior Exit survey. These surveys provide

information about student satisfaction with advising, the curriculum, their sense of preparedness to practice and job placement. Additionally, all students have the opportunity to complete the IUSD Humanistic Culture and Learning Environment Survey (administered every 3 years), which assesses aspects of the learning environment such as student-student interactions, student-faculty interactions, curricular flexibility, emotional climate, student support, curricular organization, meaningful experiences and breadth of interest.

Academic Year 2020-21 Assessment Findings and Actions

Assessment of Student Competency

The Associate Dean of Education and Academic Affairs and Assistant Dean of Curriculum Development and Assessment regularly review the first-time pass rates of our Clinical Competency Assessments, which are the summative direct measures of the 20 IUSD Institutional Competencies. First-time pass rates are considered an important measure of program quality and student preparedness. Table 2 provides an example of the data reviewed.

Table 3. First-time Pass Rates for DDS Competency Assessments, Class of 2021

| Competency Assessments (Direct Measure) | Year | Methods | IUSD Competencies (Program Learning Outcomes) | CODA Standards | First Time Pass Rate (n=116) | Final Pass Rate |
|--|--------|-----------------|---|---|------------------------------|-----------------|
| Standards Common to All Clinical Competency Assessments | D3, D4 | FA-CCA | 3, 14, 15, 16 | 2-16, 2-17, 2-18, 2-21, 2-24a, 2-24d | 84.5% | 100% |
| Behavioral Science, Communication, Cultural Competence and Ethics OSCE – Part I | D2 | IA-SP, OSCE, WA | 3, 14, 16, 19 | 2-10, 2-16, 2-17, 2-20, 2-21, 2-22 | 92.2% | 100% |
| Behavioral Science, Communication, Cultural Competence, and Ethics OSCE – Part II | D3 | IA-SP, OSCE, WA | 3, 14, 16, 19 | 2-10, 2-16, 2-17, 2-20, 2-21, 2-22 | 94.8% | 100% |
| Caries Detection, Diagnosis, Risk Assessment, and Management Competency Assessment | D3 | FA-CCA, SELF | 1, 2, 3, 6, 19, 20 | 2-10, 2-11, 2-15, 2-16, 2-22, 2-24a, 2-24d, 2-24o | 100% | 100% |

| Competency Assessments (Direct Measure) | Year | Methods | IUSD Competencies (Program Learning Outcomes) | CODA Standards | First Time Pass Rate (n=116) | Final Pass Rate |
|--|-------------|------------------|--|---|-------------------------------------|------------------------|
| Critical Thinking and Evidence-based Dentistry Competency Assessment | D3 | PICO, WS, WA | 19 | 2-10, 2-22 | 51.7% | 100% |
| Dental Emergency Clinical | D4 | FA-CCA, SELF | 1, 3, 4, 5, 20 | 2-11, 2-15, 2-20, 2-24a, 2-24c, 2-24e, 2-24m | 99.1% | 100% |
| Endodontic Clinical | D4 | FA-CCA, SELF | 1, 2, 4, 5, 10, 18, 20 | 2-11, 2-24a, 2-24e, 2-24j, 2-24m | 99.1% | 100% |
| Endodontic Emergency | D3 | WA | 1, 2, 4, 5, 10 | 2-24a, 2-24e, 2-24j, 2-24m | 99.1% | 100% |
| Operative Dentistry | D3-D4 | FA-CCA, SELF | 1, 2, 4, 6, 7, 20 | 2-11, 2-24a, 2-24d, 2-24e, 2-24f | 59.5% | 100% |
| Oral and Maxillofacial Surgery | D3,D4 | FA-CCA, SELF | 1, 2, 4, 12, 18, 20 | 2-11, 2-15, 2-24a, 2-24e, 2-24l | 100% D3 99.1% D4 | 100% |
| Oral Diagnosis and Treatment Planning Part I and Part II | D3 | FA-CCA, SELF, WS | 1, 2, 3, 11, 20 | 2-11, 2-20, 2-24, 2-24a, 2-24b, 2-24c, 2-24k, 2-24o | 100% | 100% |
| Oral Mucosal and Osseous Disorders Competency Assessment | D3 | WA, OSCE | 1, 2, 11, 20 | 2-11, 2-23, 2-24k | 96.6% | 100% |
| Orthodontic Malocclusion | D2 | WA | 1, 2, 13 | 2-23, 2-24a, 2-24n | 96.6% | 100% |

| Competency Assessments (Direct Measure) | Year | Methods | IUSD Competencies (Program Learning Outcomes) | CODA Standards | First Time Pass Rate (n=116) | Final Pass Rate |
|---|-------------|----------------|--|--|-------------------------------------|------------------------|
| Outcomes of Treatment | D4 | PICO, WS | 1, 2, 3, 11, 15, 16, 19, 20 | 2-10, 2-11, 2-15, 2-16, 2-18, 2-20, 2-22, 2-24, 2-24a, 2-24b, 2-24c, 2-24d, 2-24o | 99.1% | 100% |
| Patients with Special Needs | D4 | OSCE, WS WA | 1 | 2-24a, 2-25 | 93.1% | 100% |
| Pediatric Behavior Guidance | D3-D4 | FA-CCA, SELF | 1, 16, 20 | 2-11, 2-16, 2-23, 2-24c, 2-24o, 2-25 | 100% | 100% |
| Pediatric Case Selection & Space Maintainer Competency Assessment | D3-D4 | SIM-A | 13, 20 | 2-11, 2-23, 2-24g, 2-24n | 98.3% | 100% |
| Pediatric Comprehensive Patient Management | D 4 | OSCE, WA | 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 16 | 2-16, 2-17, 2-20, 2-23, 2-24, 2-24a, 2-24c, 2-24d, 2-24e, 2-24f, 2-24i, 2-24j, 2-24l, 2-24m, 2-24n | 84.5% | 100% |
| Pediatric Operative Class II Restoration | D3-D4 | SIM-A | 7, 20 | 2-11, 2-23, 2-24f | 96.6% | 100% |
| Pediatric Operative Stainless Steel Crown | D3-D4 | SIM-A | 7, 20 | 2-11, 2-23, 2-24f | 98.3% | 100% |

| Competency Assessments (Direct Measure) | Year | Methods | IUSD Competencies (Program Learning Outcomes) | CODA Standards | First Time Pass Rate (n=116) | Final Pass Rate |
|---|-------------|---------------------|--|----------------------------------|-------------------------------------|------------------------|
| Pediatric Pulpotomy | D3-D4 | SIM-A | 10, 4, 20 | 2-11, 2-23, 2-24e, 2-24j | 99.1% | 100% |
| Periodontics D3-Diagnosis and Management of a Gingivitis or Successfully Stable Periodontitis Case | D3 | FA-CCA, SELF | 1, 2, 9, 20 | 2-11, 2-24a, 2-24c, 2-24i, 2-24o | 100% | 100% |
| Periodontics D4-Comprehensive Treatment Planning and Management of a Stage-Grade Periodontitis Case | D4 | FA-CCA, SELF | 1, 2, 9, 20 | 2-11, 2-24a, 2-24c, 2-24i, 2-24o | 100% | 100% |
| Practice Administration | D3 | WA | 15, 17 | 2-18, 2-19 | 87.1% | 100% |
| Prosthodontic Restoration of Teeth-Crown PAC | D3-D4 | FA-CCA, SELF | 1, 2, 4, 7, 20 | 2-11, 2-24a, e, f | 99.1% | 100% |
| Prosthodontic Restoration of Teeth-Crown VPAC | D4 | WA | 1, 2, 7 | 2-24a. f, | 99.1% | 100% |
| Prosthodontic Assessment of Competency Portfolio Replacement of Teeth (Class of 2021 Only) | D4 | FA-CCA, SELF, SIM-A | 1, 2, 8, 20 | 2-11, 2-24a, g, h | 99.1% | 100% |
| Prosthodontic Replacement of Teeth-Complete Denture PAC | D3-D4 | FA-CCA, SELF | 1, 2, 8, 20 | 2-11, 2-24a, g, h | 95.2% (20/21) | 100% |
| Prosthodontic Replacement of Teeth-Complete Denture VPAC | D4 | WA | 1,2 8 | 2-24a, g, h | 50.9% | 100% |
| Prosthodontic Replacement of Teeth-Fixed Bridge SPAC | D4 | SIM-A | 1,2 8 | 2-24g, h | 69.8% | 100% |
| Prosthodontic Replacement of Teeth-Implant PAC (2021) | D4 | FA-CCA, SELF | 1, 2, 8, 20 | 2-11, 2-24a, g, h | 100% (39/39) | 100% |
| Prosthodontic Replacement of Teeth-Implant SPAC (Class of 2022+) | D4 | SIM-A, SELF | 1,2 8 | 2-24a, g, h | N/A | N/A |
| Prosthodontic Replacement of Teeth-Implant VPAC | D4 | WA | 1,2 8 | 2-24a, g, h | 100% | 100% |
| Prosthodontic Replacement of Teeth-Removable Partial Denture PAC | D3-D4 | FA-CCA, SELF | 1, 2, 8, 20 | 2-11, 2-24 a, g, h | 100% (56/56) | 100% |

| Competency Assessments (Direct Measure) | Year | Methods | IUSD Competencies (Program Learning Outcomes) | CODA Standards | First Time Pass Rate (n=116) | Final Pass Rate |
|---|-------------|-----------------|--|------------------------------|-------------------------------------|------------------------|
| Prosthodontic Replacement of Teeth-Removable Partial Denture VPAC | D4 | WA | 1, 2 8 | 2-24a, g, h | 69.8% | 100% |
| Radiology Interpretation | D3 | WS | 1, 2, 15, 20 | 2-11, 2-15, 2-18, 2-24a | 100% | 100% |
| Readiness to Practice | D4 | FA-LG, SELF, WS | 1, 2, 20 | 2-11, 2-24 | 100% | 100% |
| Screening and Risk Assessment for Head and Neck Cancer | D3 | WA | 1, 11 | 2-23, 2-24b | 65.5% | 100% |
| Standardized Patient Simulation | D1 | IA-SP, WA | 3, 14, 16, 19 | 2-10, 2-16, 2-17, 2-21, 2-22 | 98.3% | 100% |

In addition to the first-time pass rates, the Associate Dean of Education and Academic Affairs, Assistant Dean of Curriculum Development and Assessment and DDS Progress Committee (as needed) review students' progress toward meeting the eligibility criteria (essential patient experiences) to challenge competency assessments. The Associate Dean of Education and Academic Affairs, Assistant Dean of Curriculum Development and Assessment, Department Chairs, Discipline Directors and the Progress Committee work collaboratively to modify the competency assessments based on the assessment data. Amendments to competency assessments are submitted to the DDS CAC for review and approval.

In September of 2021, the IUSD predoctoral dental education program was evaluated by the Commission on Dental Accreditation for compliance with accreditation standards. As part of the school's comprehensive self-study process, the competency assessments were reviewed, and the following modifications were implemented during the 2020-21 academic year based on the results of the gap analysis:

- Standardized formatting was applied to all competency assessments described in the IUSD Competency Assessment manual, including a standardized cover sheet with the assessment purpose, mapping, process outline, grading criteria, and remediation process
- Any competency assessments using compensatory grading were transitioned to rubrics using a standard assessment scale (acceptable, marginal, unacceptable) with identified critical errors
- The IUSD Standards Common to All Clinical Competency Assessments were reviewed and updated by the Office of Education and Academic Affairs and discipline experts, and explicit instructions were added to each competency assessment form stating that students must pass the Standards Common to All Clinical Competency Assessments in order to pass the specific clinical competency assessment. These standards include: independence, cultural competence, ethics, health promotion, infection control, management of informed consent, behavioral patient management, patient privacy, and professionalism.

- An evaluation of the student’s ability to assess her/his own work was added to each competency assessment form. Students must accurately self-assess in order to pass each of our clinical competency assessments.
- Level of independence on a 1-5 scale (5 = independent practitioner) is assessed on every clinical competency assessment. Students must perform at the level of an independent practitioner in order to pass each clinical competency assessment.
- Existing key summative assessments were formally documented in the competency assessment manual:
 - Behavioral Science, Communication, Cultural Competence and Ethics OSCE Part I and II
 - Critical Thinking and Evidence-based Dentistry Critical Case Analysis
 - Practice Administration
 - Standardized Patient Simulation
- New competency assessments were created to address gaps identified during the self-study process:
 - Dental Emergency Clinical
 - Pediatric Behavior Guidance
 - Pediatric Comprehensive Patient Management
 - Readiness to Practice

Institutional Outcomes Assessment

The IUSD institutional outcomes assessment (IOA) process is broad-based, systematic, continuous, and designed to promote achievement of our institutional goals:

Table 4. IUSD Goals

| |
|---|
| IUSD Goals |
| Teaching and Learning |
| 1. Attract and support a well-prepared and diverse student population for all School of Dentistry oral health profession programs. |
| 2. Enhance student learning and develop graduates who are competent clinicians, critical thinkers, lifelong learners who are ethical, socially aware, and culturally sensitive oral health professionals. |
| 3. Attract and retain quality faculty and provide support to enhance effective teaching and learning in clinical, laboratory, classroom, and service-learning settings. |
| Research and Creative Activities |
| 4. Excel in high quality, innovative research, and scholarly activities that engage faculty, students, and staff; attract external funding; increase our national standing, and lead to improvements in oral and systemic health. |
| Patient Care |
| 5. Provide comprehensive, evidence-based, quality oral health services to individuals from any socioeconomic or cultural group. |
| Civic Engagement and Service |
| 6. Serve local, state, national, and global communities through partnerships involving clinical care, service learning, and community-engaged scholarship in addition to serving the university and the profession. |

The dean of IUSD and the IOA committee regularly review the objectives and progress toward intended

outcomes at both program and student levels. Each objective identifies direct, indirect and proxy measures able to determine the degree of achievement or progress toward our intended outcomes. The measures related to the assessment of student learning are summarized under each domain below.

Domain: Teaching and Learning

Objective: To admit students who are successful in the DDS curriculum

Table 5. First-year retention rate, AY 20-21

| Measure | Target | Findings AY 20-21 | Objective Met |
|----------------------------------|--------|-------------------|---------------|
| First-year retention rate | 98% | 95/102 (93.14%) | No |

The following program improvement initiatives were implemented based on a review of the assessment data:

- The school’s early identification and support program was reviewed and modified to facilitate greater collaboration between the Offices of Diversity, Equity and Inclusion, Student Services, and Education and Academic Affairs. As part of the revised program, there will be a more proactive approach to identifying at-risk students based on identified performance indicators and connecting students to resources such as the peer tutoring program.
- The school has committed to hiring a new Director of Student Services and an in-house mental health counselor. The Director of Student Services will be a professional staff position responsible for providing personal and academic support/guidance, developing programs to enhance students’ personal, professional, and academic development, monitoring academic outcomes, and working with faculty to identify students who are having personal and academic issues and developing customized support plans. The mental health counselor will be a clinically licensed mental health professional.

Objective: To admit a D1 class of students whose racial/ethnic makeup mirrors that of the State of Indiana

Table 6. Percent of matriculated URM students, AY 20-21

| Measure | Target | Findings AY 20-21 | Objective Met |
|---|--|-------------------|---------------|
| Percent of matriculated students who are underrepresented minorities | 13.6% (16.7% to be implemented AY 21-22) | 16/104 (15.4%) | Yes |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Due to the impact of COVID-19, virtual meet and greet sessions with all URM applying to IUSD implemented. A Diversity Pre-dent Scholars program established to speak to pre-dent students from minority backgrounds.
- The charge of the DEI workgroup was renewed under new leadership from the Office of the Dean in conjunction with the new IUSD Strategic Plan.
- Beginning in AY2021-22, the benchmark will be 16.7% to align with 2020 Indiana census data.

Objective: To ensure students are well-prepared to pass NBDE Part I by June prior to D3 clinics

Table 7. NBDE I Pass Rate by June D2, Class of 2022

| Measure | Target | Findings AY 20-21 | Objective Met |
|---------------------------------|--------|-------------------|---------------|
| Pass rate on NBDE Part I | ≥ 98% | 93/102 (91.17%) | NO |

| Measure | Target | Findings AY 20-21 | Objective Met |
|---|--------|-------------------|---------------|
| by June prior to the beginning of D3 clinics | | | |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Beginning with the Class of 2023, this objective and measure will change to “First-time pass rate on the integrated national board dental examination (INBDE).” The Institutional Outcomes Committee in conjunction with the Office of Academic Programs will determine the appropriate benchmark.
- New course developed, D710 Biomedical-Clinical Sciences Case Conference, to further reinforce biomedical-clinical science integration and to help prepare students for the new INBDE. The course will provide students with exposure to boards-style “patient-box” questions based on clinical cases.

Objective: To ensure students are well-prepared to pass NBDE Part II by Spring Semester graduation date or within 3 months after completion of essential clinical experiences and competency assessments, whichever comes later

Table 8. NBDE II Pass Rate by Graduation of Completion of Competency Assessments, AY 20-21

| Measure | Target | Findings AY 20-21 | Objective Met |
|---|--------|-------------------|---------------|
| Pass rate on NBDE Part II by Spring Semester graduation date or within 3 months after completion of essential clinical experiences and competency assessments, whichever comes later | 100% | 100/100 (100%) | Yes |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Beginning with the Class of 2023, this objective and measure will change to “First-time pass rate on the INBDE.” The Institutional Outcomes Committee in conjunction with the Office of Education and Academic Affairs will determine the appropriate benchmark.
- New course developed, D710 Biomedical-Clinical Sciences Case Conference, to further reinforce biomedical-clinical science integration and to help prepare students for the new INBDE. The course will provide students with exposure to boards-style “patient-box” questions based on clinical cases.

Objective: To ensure students are well-prepared to pass all sections of the clinical licensure board exam

Table 9. First-time pass rate CDCA, AY 20-21

| Measure | Target | Findings AY 20-21 | Objective Met |
|--|--------|--|------------------|
| First-time pass rate on each section of the clinical licensure board exam | >90% | Diagnostic Skills: 100% Prosthodontics: 87.90% Endodontics: 74.10% Periodontics: 97.90% Restorative: 87.00% | Partially |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Due to the impact of COVID-19, structured practice sessions were scheduled and equitably distributed between the students in the Class of 2021. The Associate Dean for Clinical Affairs, CDCA Coordinator, Predoctoral and/or Clinic Directors attended the sessions to determine which students needed additional practice. The additional practice sessions were coordinated through IUSD’s CDCA Coordinator.
- Department of Cariology, Operative Dentistry, and Dental Public Health implemented two simulation-based competency assessments to supplement patient-based competency assessments. For the #30 MOD amalgam prep and restoration, the department had review sessions, which provided in-depth materials ahead of the exam. Those who did not pass on the first attempt met with faculty individual to review the prep and restoration.
- Based on results of the assessment data, it was recommended to form a task force to review the endodontics curriculum to determine opportunities to help prepare students to be successful on the CDCA.

Objective: To graduate students within 4 years of enrollment

Table 10. 4-year graduation rate, AY 20-21

| Measure | Target | Findings AY 19-20 | Objective Met |
|-------------------------------|--------|-------------------|---------------|
| 4-year graduation rate | >95% | 92.45% | No |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Early identification and support program reviewed and modified to facilitate greater collaboration between the Offices of Diversity, Equity and Inclusion, Student Services, and Academic Affairs. As part of the revised program, there will be a more proactive approach to identifying at-risk students based on identified performance indicators and connecting students to resources such as the peer tutoring program.
- The school has committed to hiring a new Director of Student Services and an in-house mental health counselor. The Director of Student Services will be a professional staff position responsible for providing personal and academic support/guidance, developing programs to enhance students’ personal, professional, and academic development, monitoring academic outcomes, and working with faculty to identify students who are having personal and academic issues and developing customized support plans. The mental health counselor will be a clinically licensed mental health professional.

Objective: To graduate students who feel confident for independent practice

Table 11. ADEA Senior Survey Results, Class of 2020

| Measure | Target | Findings Class of 2020 | Objective Met |
|---------------------------|--------------------|------------------------|------------------|
| ADEA Senior Survey | ≥ National average | See data table below | Partially |

Table 12. Percent of Students Reporting Preparedness Confidence

| Item | 2020 (AY 2019-20) | |
|--------------------------------------|-------------------|-------------|
| | IUSD | All Schools |
| Pt. Assessment, Dx, Tx Plan (Eval) | 100% | 99.5% |
| Integrating Dental and Medical Care | 100% | 99.2% |
| Health Promotion (Prevention & Educ) | 100% | 99.6% |
| Therapeutics & Prescription Writing | 96.0% | 96.7% |
| Oral Disorders (Oral Pathology) | 96.0% | 93.9% |

| Item | 2020 (AY 2019-20) | |
|-------------------------------|-------------------|-------------|
| | IUSD | All Schools |
| Malocclusion (Orthodontics) | 88.5% | 88.3% |
| Restoration of Teeth | 96.2% | 99.8% |
| Replacement of Teeth | (Fixed) | 96.2% |
| | (Removable) | |
| | (Implant) | |
| Periodontics | 100% | 98.9% |
| Pulpal Therapy (Endodontics) | 88.5% | 94.7% |
| Tissue Surgery (Oral Surgery) | 88.5% | 87.1% |
| Dental Emergencies | 96.2% | 97.9% |
| Practice Administration | 68.0% | 88.1% |

The following program improvement initiatives were implemented based on a review of the assessment data:

- Implemented for Academic Year 2020-21, all clinical competency assessments evaluate the students' level of independence (from 1 critical deficiency to 5 independent practitioner). Students must complete the procedure at the level of an independent practitioner to pass the clinical competency assessment. Additionally, as a prerequisite for many of our clinical competency assessments, students must have performed the defined task/procedure at least once on a patient with "minimal guidance" (independence level 4). This ensures students have had sufficient experience to function independently on the assessment.
- Implemented for Academic Year 2020-21, a "Readiness to Practice" competency assessment evaluates students preparedness for the independent and unsupervised practice of general dentistry, based on performance on the Diagnosis and Treatment Planning and Outcomes of Patient Care Competency Assessments, daily procedural independence trend data, and professionalism. This holistic assessment provides students with the opportunity to provide evidence and a rationale for why they are prepared for independent practice.
- Department of Cariology, Operative Dentistry, and Dental Public Health implemented two simulation-based competency assessments to supplement patient-based competency assessments. For the #30 MOD amalgam prep and restoration, the department had review sessions, which provided in-depth materials ahead of the exam. Those who did not pass on the first attempt met with faculty individual to review the prep and restoration.
- A practice administration competency assessment was implemented for the Class of 2021. Additionally, Practice Administration faculty are working with CBDE and Dental Practice Extramural faculty to align and reinforce the foundational concepts taught in the didactic practice management courses with the experiential learning occurring in the community more intentionally.
- A patient-based Dental Emergency Competency Assessment implemented to supplement the written Competency Assessment.

Domain: Research

Objective: To engage student co-authors on research publications

Table 12. Student co-authored publications and abstracts

| Measure | Target | Findings AY 20-21 | Objective Met |
|---|--------|-------------------|---------------|
| Number of peer-reviewed publications | ≥ 3 | 0 | No |

| | | | |
|----------------------------|----|----|-----------|
| Number of abstracts | 20 | 18 | No |
|----------------------------|----|----|-----------|

The following program improvement initiatives were implemented based on a review of the assessment data:

- Due to COVID, research labs were operating in a limited capacity and hindered abstract submission. Research Day and AADR became virtual meetings. Corrective action: supported faculty to resume research activities, which included post-doc awards and support for funding equipment.

Objective: To involve students in structured, funded, faculty mentored research

Table 13. Students Involved in Structured, Funded, Faculty Mentored Research

| Measure | Target | Findings AY 20-21 | Objective Met |
|--------------------------------------|-----------|-------------------|---------------|
| Students involved in research | ≥ 13 | 13 | Yes |

There were no recommendations for program improvement based on a review of the data associated with this objective.

Domain: Civic Engagement and Service

Objective: To engage IUSD students in service learning or community-based dental experiences

Table 14. Students engaged in service learning or community-based dental education experiences

| Measure | Target | Findings AY 20-21 | Objective Met |
|---|--------|-------------------|---------------|
| Number of students engaged in service learning or community-based dental experiences | 100% | 116/116 (100%) | Yes |

There were no recommendations for program improvement based on a review of the data associated with this objective.

Curriculum Assessment

The Curriculum Management Plan (CMP), which functions as the foundation of the IUSD curriculum assessment process, is on a four-year cycle and focuses on three key areas, as required by CODA standards:

- Elimination of unwarranted repetition and outdated and unnecessary material,
- Incorporation of emerging information and achievement of appropriate sequencing, and
- Incorporation of emerging didactic and clinical technologies to support the dental education program

In addition to the CMP, individual faculty and/or administrators are encouraged to make recommendations to CAC for course improvement or suggest portions of the curriculum to review.

In the AY 2020-21, the DDS Curriculum and Assessment (CAC) CMP subcommittee reviewed 33 courses and 22 recommendations were made to course directors for course-level improvement. Tables 14-16 summarize selected examples of recommendations, action steps and outcomes as a result of the school's curriculum

assessment process during academic year 2020-21 (a full table of recommendations, action steps and outcomes available by request).

Table 14. Example of Incorporation of Emerging Information and Achievement of Appropriate Sequencing: D763 Pharmacotherapeutics

| Recommendation | Action Steps | Response/Follow-up/Outcome |
|---|--|--|
| Explore feasibility of re-sequencing the course, potentially dividing Pharmacotherapeutics into two courses, e.g. Fall/Spring D3, focusing first on the medications pertinent to new D3 students treating patients in the IUSD clinics. | <p>2021 Evaluate sequencing of course content across two semesters, with the intent to support the integration of biomedical and clinical sciences, student retention of knowledge, and success on the INBDE. Consider all instructional modes, online, hybrid, and in-person.</p> <p>2021 In collaboration with the course directors for Hospital Dentistry, Clinical Medicine, Pain and Anxiety Management, and Director of the IU Emergency Clinic, develop a course outline for the Fall (drugs pertinent to new D3 students) and Spring (systems approach to pharmacology; top 200 drugs) semester courses and opportunities for team-teaching. Timeline for implementation: Academic Year 2022-23.</p> | <p>2021 Course director evaluated the sequencing of the Pharmacotherapeutics course and believes it to be feasible and a positive move in the curriculum to support student learning. The Fall course would include drugs immediately pertinent to new D3 students in clinics, with the second semester focusing on a systems approach to pharmacology with emphasis on the top 200 drugs prescribed in the US.</p> <p>Action ongoing.</p> |

Table 15. Example of Reviewing Clinical Teaching, Learning and Assessment

| Recommendation | Action Steps | Response/Follow-up/Outcome |
|---|--|---|
| Evaluate patient distribution on an ongoing basis to look for opportunities to improve the process in order to support the school's teaching and learning mission | <p>2021 Review current process for distributing patients to students.</p> | <p>2021 Course Director is in the process of reviewing how patients are scheduled in screening clinic. She will also review the current process for distributing patients to students. The Course Director will get input from clinic directors and students. The plan is to go back to the pre-COVID screening schedule where clinic directors would be supervising in the screening clinic. Having clinic directors oversee screening will help streamline the process. The Course Director will be updating</p> |

| Recommendation | Action Steps | Response/Follow-up/Outcome |
|--|--|--|
| | | <p>the patient needs assessment form according to the feedback she has received from the directors. She plans to meet with directors frequently to keep everyone consistent with expectations and assess areas of improvement. Assessing patient distribution will be done on an ongoing basis.</p> <p>No further action needed.</p> |
| <p>Consider including other patient management metrics in the grading expectation for the course</p> | <p>2021 Review course grading expectations and explore other patient management metrics for determining achievement in comprehensive care and patient management, e.g. overdue patient measure</p> <p>2021 Review 6 months of overdue patient data in order to assess the feasibility of using the metric as part of course grading expectations</p> | <p>2021 Course Director will review the course grading expectations and explore patient management metrics for determining achievement in the comp care course. She would like to evaluate the new overdue patient management process. It is being monitored by the Director of Quality Improvement and the Course Director monthly to determine if the school is meeting its threshold set for the process. The plan is to obtain data for 6 months prior to making any changes to the course.</p> <p>Action ongoing.</p> |

Table 16. Example of Incorporation of Emerging Didactic and Clinical Technologies: Classroom Technologies

| Recommendation | Action Steps | Response/Follow-up/Outcome |
|---|--|--|
| <p>Upgrade the technologies in DS116/DS117 lecture halls and the preclinical simulation and bench labs.</p> | <p>2020 Review with key stakeholders and the Office of Academic Programs the technology needs in DS116/DS117 and the preclinical simulation and bench labs.</p> | <p>2020 In 2020, the large lecture halls S116 and S117 were updated to include new carpet, new paint, acoustic tiles and new 4k state-of-the-art audiovisual capabilities, upgraded infrastructure and networking:</p> <ul style="list-style-type: none"> ● Upgraded/replaced all outdated analog equipment/wiring and converted to digital (including 4k projectors). ● Installed ADA compliant podiums. ● Installed ADA compliant hearing assist devices |

| Recommendation | Action Steps | Response/Follow-up/Outcome |
|----------------|--------------|---|
| | | <ul style="list-style-type: none"> ● New higher contrast screen to match quality and ratio of new projector, to help projector image quality ● New digital tile array microphones for the audience. Each tile array has eight individual microphones, which are configured to cover the entire audience area. ● Solstice pods for wireless laptop connection enabling any laptop to wirelessly connect to the projector and display in the room. <p>Additionally, new computers and AV system with wireless microphones were installed in the basement bench and sim labs. Futudent cameras were installed to the instructor units of the Sim Lab to broadcast faculty demonstrations to students.</p> <p>No further action needed.</p> |

Response to COVID-19

Similar to most schools/programs during the academic year 2019-2020, the IUSD predoctoral dental education program was impacted by the COVID-19 pandemic. To guide IUSD’s response to the evolving situation surrounding COVID-19, Dean Murdoch-Kinch led an incident management team and also charged two task forces – clinical and academic – to develop plans for safely resuming academic activities and graduating the class of 2020. The IUSD COVID-19 Academic Task Force consisted of a steering committee and 5 subgroups: DDS curriculum, allied dental curriculum, academic facilities, and content delivery. As a result of the work of the steering committee and subgroups, the Academic Task Force recommended and implemented several key initiatives to restart academic activities:

- The IU School of Dentistry, in accordance with guidance from the Commission on Dental Accreditation (CODA), made temporary modifications to its competency assessments for the class of 2020. Alternative approaches to the assessment of competency were developed for those students who had not demonstrated competency through our traditional patient-based competency assessments and were consistent with the school’s curriculum management and internal processes. These competency assessments were primarily case-based and delivered online. These alternative competency assessment instruments were developed and assessed by the same calibrated discipline-based faculty evaluators who had developed and assessed the existing competency assessments documented in our IUSD Competency Assessment Manual. The following competency modifications using simulation or other assessments were used in lieu of live-patient assessments:
 - **Cariology:** online case-based competency assessment and simulated patient OSCE that included live questioning and discussion with faculty.
 - **Comprehensive patient care:** The two competency assessments (Diagnosis and treatment planning and Outcomes of Treatment) were assessed via ZOOM. Assessment criteria and the competency assessment instrument were unchanged

- **Endodontics:** manikin-based simulated competency assessment (completed prior to the COVID-19 disruption) and a patient-based competency assessment. Students who had not completed the patient-based assessment were required to challenge the patient-based assessment once clinical operations resumed
- **Operative dentistry:** students who had successfully challenged 2 patient-based competency assessments were permitted to challenge an online case-based comprehensive competency assessment
- **Oral Surgery:** students who met minimum patient-based expectations but did not have the opportunity to complete the patient-based competency assessment, were eligible for a retrospective assessment of competency based on the last daily formative assessment. All oral surgery procedures were graded using the same rigorous criteria as the competency assessment case, validating the use of the retrospective approach
- **Periodontics treatment planning and evaluation:** competency was assessed using an online OSCE
- **Prosthodontics:** stages of prosthodontic treatment were simulated using separate virtual computer-based competency assessments for removable partial denture, complete denture, implant, and fixed prosthodontics.
- Additional exam security features were implemented for remote assessments. In addition to the Examssoft Examplify secure testing environment, ExamID (test-taker identity verification) and ExamMonitor (remote AI-based proctoring) were implemented.
- A number of high stakes D1-D4 Fall didactic courses were moved to summer session I/II to free curricular time in the Fall 2020 to frontload preclinical and clinical sessions in the early half of the fall semester.
- With physical distancing requirements, the Academic Facilities subgroup determined that overall preclinical capacity would decrease to 20% of pre-COVID-19 capacity with only the existing preclinical simulation and bench labs. Fortunately, IUSD had an excess capacity in the unoccupied former clinics A, B, C and the original predoctoral operative, prosthodontics, periodontics and dental hygiene clinics. Transitioning these sites to preclinical use increased IUSD's capacity to deliver our preclinical DDS, DH and DA educational programs to >50% of pre-COVID-19 levels. These modifications, combined with course level adjustments to selected preclinical projects to permit "at home" learning supported by the acquisition of portable electric handpiece units and additional armamentarium for our D1-D2 students, largely mitigated the capacity issues.
- Clinical capacity and student clinical activity was maximized during the early fall to ensure students a robust and diverse portfolio of clinical experiences and mitigate the impact of possible continued shortages of PPE and clinic shutdowns. Additional recommendations including development of a defined monitoring system involving clinic directors and clinical discipline coordinators, supported by the Office of Academic Programs, to regularly assess individual student progress towards attainment of clinical competence, transitioning away from the use of numerical procedural criteria as a prerequisite for challenging clinical competency assessments and expanding, where appropriate, the use of simulated competency assessments.
- The Content Delivery subgroup identified 4 priorities that were implemented over the course of the Spring and Summer Terms of 2020 and into AY20-21, including:
 - Enhanced communication with course directors about providing accessible content for all students
 - Providing support for faculty using technologies to teach online synchronously and asynchronously
 - Developing a process for faculty to review exams with students securely in a remote education setting

- Distributing a guidance document to IUSD faculty communicating best practices for teaching remotely

With the strategies developed by the COVID-19 Academic Task Force, academic activities resumed for predoctoral students during the Summer Session of 2020.

For the AY 2020-21, the predoctoral dental education program returned, for the most part, to a pre-COVID curriculum. However, upon evaluating our response to COVID-19 and the outcomes of our curricular adjustments, some of our modifications have remained in place for AY 2020-21:

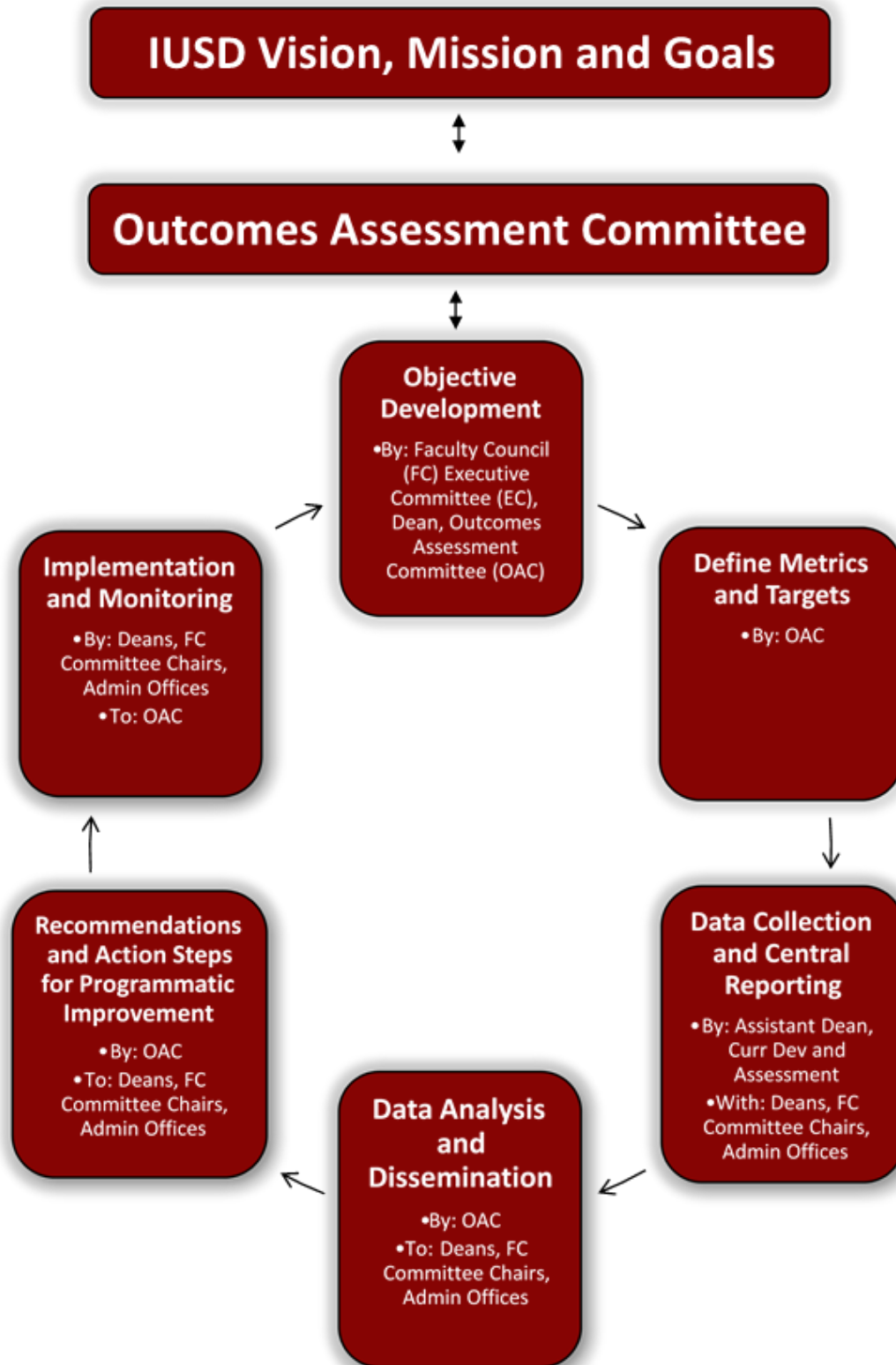
- The Offices of the Dean and Education and Academic Affairs have promoted flexibility for our student learners by encouraging faculty course directors to employ multiple instructional modalities, including in-person, lecture capture video, asynchronous, and synchronous online lectures.
- While most exams have returned to an in-person format, remote assessment through Examsoft ExamMonitor is still offered in situations in which both the faculty and student agree to the circumstances and format. Although used infrequently, online proctored assessments is a format we will continue to offer on an as needed basis.
- Many course directors continue to use the Canvas front page template and modules to organize their in-person courses, as recommended by the Content Delivery Subgroup of the Academic Task Force.
- Upon reviewing the outcomes of the virtual prosthodontics assessment of competency (VPAC) in the disciplines of fixed, removable, and dental implant prosthodontics, the Department of Prosthodontics, with input from the Office of Education and Academic Affairs, will continue to administer the VPAC to supplement its patient-based competency assessments. The VPACs provide an additional measure of students' ability to critically think and problem solve relative to diagnosis, treatment planning, and evaluating the outcomes of patient care.

Summary

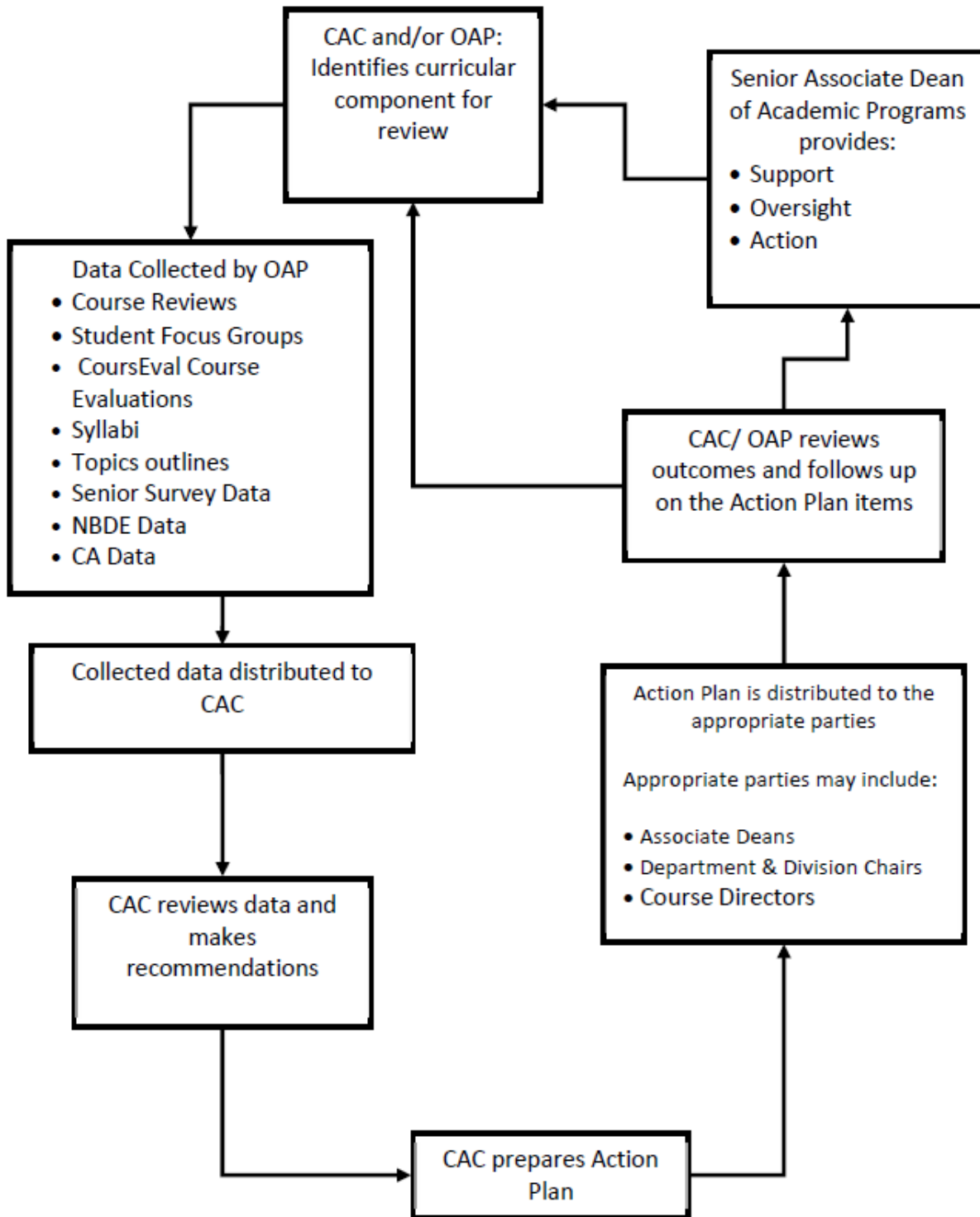
The IUSD Institutional Competencies define what a competent graduate will be able to do upon graduation. Multiple assessments are used to evaluate students across four years of the program and include the assessment of a broad range of attributes, aligning with both the IUPUI Principles of Graduate and Professional Learning and CODA Standards for Dental Education Programs. Competency assessments serve as the final measurement of the defined set of knowledge, values and skills that have been developed through the formative daily feedback process.

IUSD has multiple processes in place to evaluate the content of the DDS 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 continuous evaluation of the program as a whole, which result in ongoing improvements in student learning.

Appendix A: Outcomes Assessment Process



Appendix B: Curriculum Management Plan Flowchart



Appendix C: Curriculum Management Plan Course Director Review Forms



INDIANA UNIVERSITY

SCHOOL OF DENTISTRY

IUPUI

February 11, 2022

Dear Course Directors,

Standard 2-8 of the Commission on Dental Accreditation's Standards for Dental Education Programs requires dental schools to have a curriculum management program 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 and outdated and unnecessary material;
- d. incorporation of emerging information and achievement of appropriate sequencing;
- e. incorporation of emerging didactic and clinical technologies to support the dental education program curriculum.

The faculty and administration have constructed multiple measures to collect this information. One of these methods is a program of in-depth study of defined portions of the pre-doctoral curriculum each academic year by the faculty members of the Curriculum and Assessment Committee (CAC) and the Office of Academic Programs. The **[defined portion of the curriculum]** has been selected for evaluation by the committee.

As a course director in a **[defined portion of the curriculum]** course, you are being asked to participate in this ongoing process by completing the appropriate forms which are included in this electronic packet. If your course is currently running, or has yet to run, please assess its most recent running.

When you have completed the appropriate review forms, please submit them electronically to **[OAP representative]**. **The CAC requests that all review packets are submitted by no later than [DATE].**

If you have questions regarding this process, please contact **[CAC Chair]**, Chairperson of CAC, or **[OAP representative]** in the Office of Academic Programs.

Thank you for your dedication to excellence in dental education.

Sincerely,



CURRICULUM MANAGEMENT PROGRAM COURSE DIRECTOR REVIEW FORM

Directions for completing the form:

1. Please complete the form by typing your text responses in the designated gray response fields (the fields will expand as you type your text).
2. For the check boxes, please double click the box you would like to select and then choose "checked" from the list of options.

| | |
|-------------------------|--|
| Course number: | |
| Course title: | |
| Course director: | |
| Date of review: | |

1. Have students achieved the defined objectives/competencies for your course?

Yes

No

Unsure

a. What evidence do you use to support your conclusions?

2. How did you measure student achievement of the defined objectives/competencies?

3. Please summarize and discuss the student evaluations of your course.

4. Based upon the evaluations and student outcomes, what changes have you made to your course? What changes are you planning for the next academic year?

5. What difficulties or concerns do you have regarding your course? How can IUSD assist?

6. How is the use of best evidence incorporated in your course and how is it assessed?

7. How is critical thinking assessed in your course?

8. Do students self-assess in your course? If so, please describe the self-assessment process and how it is evaluated.

9. In your course, how are basic and behavioral sciences integrated with clinical practice?

10. Does your course support the core competencies of interprofessional education, which include: values/ethics for interprofessional practice, roles/responsibilities of the health care team, interprofessional communication, and interprofessional teamwork? If so, how are these aspects of IPE assessed?

Appendix D: Curriculum Management Plan Curriculum Committee Review Form



INDIANA UNIVERSITY
SCHOOL OF DENTISTRY
IUPUI

CURRICULUM MANAGEMENT PROGRAM COURSE REVIEW PACKET – CAC REVIEWER

Protocol:

1. Please use this packet to guide your review of the curriculum management documentation:
 - a. Course Review by Course Director Packet
 - b. Student focus group report
 - c. CoursEval course evaluations
 - d. Course syllabus
2. Please follow the instructions under each section.
3. Once you have completed the review packet, please submit it by following the instructions on the last page.

Course Information:

Instructions:

1. Please type the course number and title in the “Course for review” field.
2. Please identify the documents contained in the review packet for the course you are reviewing, and check them off in the “Items for Review” checklist by clicking on the check boxes.

| | |
|---------------------------|--|
| CAC Reviewer: | |
| Course for review: | |
| Date of review: | |

| | |
|--------------------------|---|
| Items for review: | <input type="checkbox"/> Course Review by Course Director <input type="checkbox"/> Student Focus Group Report <input type="checkbox"/> CoursEval Course Evaluation <input type="checkbox"/> Syllabus |
|--------------------------|---|

Summary of Syllabus

Instructions:

1. Please review the Course Syllabus of the course.
2. Please identify any concerns with course objectives, grading expectations or course policies.
3. Please provide a brief summary of your review in the field below.

Summary of Course Director Self-Study Packet Review

Instructions:

1. Please review the “Course Review by Course Director Packet” of the course you are reviewing.
2. Please identify any themes or notable comments that may emerge. These themes or notable comments may indicate strengths of the course or areas for improvement.
3. Please provide a brief summary of your review in the field below.

Summary of Focus Group Report

Instructions:

1. Please review the “Focus Group Report” of the course.
2. Please identify any themes or notable comments that may emerge. These themes or notable comments may indicate strengths of the course or areas for improvement.
3. Please provide a brief summary of your review in the field below.

Summary of CourseEval Course Evaluations

Instructions:

1. Please review the “CourseEval Course Evaluations” of the course.
2. Please identify any themes or notable comments that may emerge. These themes or notable comments may indicate strengths of the course/module or areas for improvement.
3. Please provide a brief summary of your review in the field below.

Summary of Recommendations:

Instructions:

1. Based on your comments made in the summary sections above, please record your recommendations for the course in the fields below.
2. There are fields for up to 5 recommendations. Please list each recommendation in a separate field.

Recommendation #1

Recommendation #2

Recommendation #3

Recommendation #4

Recommendation #5

Submission Instructions:

1. Please save this document with the course number, e.g. D501, in the title and email it to [OAP Representative] in the Office of Academic Programs.