

WHITE PAPER

# Transforming Oral Health Care Through Interprofessional Education

**IPE Use Cases**

**SUGGESTED CITATION:**

CareQuest Institute for Oral Health. *Transforming Oral Health Care Through Interprofessional Education: Use Cases*. Boston, MA: April 2025.

DOI: 10.35565/CQI.2025.2002.

Copyright © 2025 CareQuest Institute for Oral Health, Inc.



# Transforming Oral Health Care Through Interprofessional Education

## IPE Use Cases

---

Tables and Figures .....	3
Introduction.....	4
Adams School of Dentistry, University of North Carolina at Chapel Hill.....	5
Harvard School of Dental Medicine .....	10
Hunt School of Dental Medicine at Texas Tech Health El Paso .....	12
Midwestern University .....	15
NYU Langone Dental Medicine Postdoctoral Residency Programs.....	18
The Ohio State University College of Dentistry .....	20
Tufts University School of Dental Medicine.....	23
University of California, San Francisco School of Dentistry.....	26
University of Colorado Denver Anschutz Medical Campus .....	32
University of Detroit Mercy School of Dentistry .....	33
University of Florida College of Dentistry.....	36
University of Illinois Chicago College of Dentistry ..	38
University of Iowa College of Dentistry.....	41
University of Michigan .....	44
University of Nevada Las Vegas (UNLV) School of Dental Medicine.....	45
University of New Mexico Health Sciences .....	47
University of Pittsburgh School of Dental Medicine .....	48
University of Texas Health Science Center Houston .....	53
University of Washington School of Dentistry .....	55



# Tables and Figures

<b>Number</b>	<b>Title</b>	<b>Page</b>
Table A	IPE Curriculum Mapping for the University of North Carolina Dental Hygiene Program	<a href="#">8</a>
Table B	IPE Curriculum Mapping for the University of North Carolina Predoctoral Dental Education Program	<a href="#">9</a>
Figure A	University of Detroit Mercy School of Dentistry IPE Curriculum by Year	<a href="#">35</a>
Table C	List of Interprofessional Experiences Offered to Predoctoral Dental Students at the University of Pittsburgh	<a href="#">52</a>



# Introduction

The use cases portion of this Interprofessional Education (IPE) white paper presents descriptions of 19 academic institutions across the US that serve as examples of oral health-related IPE programs and activities that are currently ongoing (presented alphabetically by institution name). These use cases represent significant variability in implementation scale and scope of IPE activities. Some programs represent the interaction of two or three health professions, while others involve more than a dozen health professions. Some programs focus on a few IPE activities, while others describe multiple required and optional activities in which students participate. As all academic institutions differ significantly in the resources available to them and the barriers they face in terms of implementing IPE activities, one conclusion is clear: There is no one-size-fits-all approach to developing, implementing, and maintaining IPE programming across all institutions. The hope is that this paper will serve as a resource for its readers, highlighting the importance of incorporating oral health into IPE efforts and providing both current examples of such efforts and a foundation upon which future IPE initiatives may be built.

**As all academic institutions differ significantly in the resources available to them and the barriers they face in terms of implementing IPE activities, one conclusion is clear: There is no one-size-fits-all approach to developing, implementing, and maintaining IPE programming across all institutions.**

# Adams School of Dentistry, University of North Carolina at Chapel Hill

*Zachary Brian, DMD, MHA, FICD, FACD; Roxanne Dsouza-Norwood, EdD, MS, RDH; Sarah Lindsay Liebemann, MS, RDH; Heidi McNeilly, MSW; Kimberly A. Sanders, PharmD, BCPS; and Jeffery Stewart, DDS, MS*

## Introduction

The University of North Carolina at Chapel Hill (UNC-CH) is committed to providing students with meaningful and intentional interprofessional education and practice (IPEP) opportunities. In 2018, the Office of Interprofessional Education and Practice (OIPEP) was established by the provost to provide opportunities for learners, faculty, and staff to engage across professions to “learn from, with, and about each other to advance health outcomes.” The mission of OIPEP is “to support interprofessional endeavors that enhance the capacity and capability to improve health outcomes.” The vision of OIPEP is “to be the model for IPEP and produce graduates who will transform the health care system and improve the health of patients and populations in North Carolina and beyond.”

Each school in the OIPEP network has named an IPEP Director who works closely with the Associate Provost for Interprofessional Health Initiatives in the OIPEP to design, implement, and evaluate interprofessional didactic and experiential learning opportunities. Participating OIPEP schools and departments include the UNC-CH Health Sciences Library; the Schools of Business, Education, Medicine, Dentistry, Nursing, Public Health, Pharmacy, and Social Work; and the Departments of Biomedical Engineering and Health Sciences (occupational therapy, physical therapy, physician assistant, radiologic sciences, clinical lab sciences, speech, neurologic sciences, and audiology). Students have required “core” activities and elective offerings that are deliberately designed to span longitudinally through the entire curriculum. Core activities are organized into three areas across a developmental model: Cooperation, Coordination, and Collaboration. Additionally, students can go “above and beyond” in interprofessional education (IPE) and earn the “IPEP Distinguished Scholars” distinction on their official transcript by participating in extracurricular IPE activities, organizations, and projects. See the [UNC-CH OIPEP Year 6 Annual Report](#) for examples of extracurricular IPE opportunities available to dental and dental hygiene students.

## Objectives and Benefits

The key strategic goals of OIPEP are to:

- Establish a core of interprofessional didactic opportunities for every OIPEP partnering school
- Build campus-wide partnerships to:
  - Enhance communication
  - Share best practices and resources
  - Identify, facilitate, and promote opportunities for cross-departmental collaboration
  - Advance scholarship in IPEP

## Program Components

### *Let's Grow Together*

Over the summer, dental and dental hygiene students read *Peak: Secrets from the New Science of Expertise* by Anders Ericsson and Robert Pool. During this program, students engage in interprofessional book-club-style discussions centered around concepts such as growth mindset, resilience, and motivation, enabling learners in the early stages of their professional program to identify shared values, form relationships, and understand professional roles. This program will be combined with Health Professions Orientation in future years.

### *Health Professions Orientation*

To matriculate into the program and meet interprofessional peers, dental and dental hygiene students participate in Health Professions Orientation, which provides opportunities to form connections at the beginning of their health professions journey. Learners engage with various university faculty and staff to learn about providing clinical care and advancing overall health in individuals and communities. Learners then engage in a variety of assigned two-hour interprofessional activities. The activities are designed around the IPEC competency of Roles and Responsibilities and foster excitement and buy-in around IPE.

### *Meet Your Neighbor*

During the Meet Your Neighbor program, dental and dental hygiene students reflect individually on their motivations for pursuing their specific profession and its impact on health. They then meet with a team of students from other professions to discuss similarities and differences in their motivations and outcomes. Teams debrief on how these insights might affect future collaborations in advancing health and then complete an assignment that is submitted to faculty. This activity fosters a shift in thinking from “Me” to “We,” ideal for students beginning their professional journeys.

### *Can You Hear Me Now?*

Dental and dental hygiene students complete pre-reading on [TeamSTEPPS](#) and introduce themselves to their team. Facilitators lead students through three case scenarios focused on roles/responsibilities, communication, and conflict management. Facilitators debrief students after each case review using facilitator guides. The activity focuses on developing the “We in Teams” framework for coordination and is ideal for students who have already developed a foundation of interprofessional knowledge and attitudes.

### *Partnership for Population Health (P4P)*

Dental and dental hygiene students participate in this activity to develop a population health intervention while engaging with interprofessional teammates in an unfolding case activity that equips graduate health professions students with foundational teamwork skills needed for effective collaboration and coordination of care in population health management. Special emphasis is placed on identifying and stratifying populations at risk, evidence-based care planning, care coordination and patient engagement, data analytics, and reporting outcomes. Key themes focus on interprofessional communication, collaboration, leadership, and professionalism. This activity focuses on developing collaboration framed as “Teams to Systems” and is ideal for students with a strong foundation of interprofessional skills.

### *Interprofessional Telehealth*

In this activity, dental and dental hygiene students collaborate with various disciplines for a virtual patient encounter. Content is delivered via asynchronous learning modules on the learning management system. Following successful completion of the modules, students are assigned to small, interprofessional teams to complete a standardized patient encounter representing a telehealth visit. Small groups have a debriefing session, followed by a reflection assignment.

### *Interprofessional Geriatric Experience (Dental Hygiene Only)*

Dental hygiene students interact and collaborate with other health care providers during an Interprofessional Geriatric Experience including an unfolding case study focused on a geriatric patient. Interprofessional teams are assigned into small groups that review and discuss cases before debriefing. Small groups also reunite with the larger group to reflect on what went well, what could be improved, and overall considerations for the learning experience.

### *IPE Case with Pharmacy*

Second-year dental hygiene students and third-year dental students work with third-year pharmacy students on a comprehensive case that includes the dental management of a medically complex patient. Clinical concentration is placed on determining appropriate antibiotic prophylaxis for the prevention of infective endocarditis, discussion on anticoagulants, and determining a pain management plan. The students meet in groups of 8–10 for one two-hour session to discuss the case and develop a plan of care.

### *Pharmacotherapy Consult Program*

An ongoing clinical pharmacy consult program is in place for all dental and dental hygiene students practicing within the student clinics. Students identify individuals from their patient pool who may be indicated for consultations with a clinical pharmacist and pharmacy students. These patients are generally medically complex. Areas of consultation include medication history verification, review of patient’s medications for oral health impact, review of high-risk medications for dental procedures (e.g., anticoagulants, antiplatelets, bisphosphonates, etc.), chronic disease-state management education, prescription writing assistance, and general drug information requests. On average, the pharmacy team (pharmacy faculty and students) is in clinic 1–2 sessions per week and conducts approximately 430 chart reviews per semester.

### *Social Work Consult Program*

An ongoing clinical social work consult program is in place for all dental and dental hygiene students practicing in the student clinics. Students identify individuals with complex psychosocial needs from their own patient pool who may be indicated for consultations with a clinical social worker and social work students. Areas of consultation include assistance with referrals to therapy, primary care, or substance use treatment; connection to community support services for basic needs; crisis intervention; and brief counseling for health behaviors negatively affecting oral health. On average, the social work team (social work faculty and students) conducts approximately 150 consultations per semester and is in clinic 3–4 sessions per week.

### *IPEP Intramural Rotation (Dental Students Only)*

Under the guidance of pharmacy and social work faculty members, third- and/or fourth-year dental students complete the IPEP rotation, where they submit a medically complex patient case active in their patient pool and attend a small-group seminar with 4–8 students to discuss patient cases. In their submission, they must choose one patient with a psychosocial need and one patient with a pharmacological need, or one patient with both needs, and craft an SBAR (Situation, Background, Assessment, Request) consult for pharmacy and social work. This experience focuses on working with other health disciplines during consultations and explores how all members of the health care team can effectively work together to provide person-centered care and utilize resources from other health disciplines.

## Lessons Learned

The implementation of the IPEP program at UNC-CH has provided valuable insights into the design and delivery of IPEP within the dental and dental hygiene curricula. Several key lessons have emerged:

- 1. Early Engagement Fosters Collaboration:** Introducing interprofessional activities early in students' education, such as in the Let's Grow Together and Meet Your Neighbor programs, cultivates a foundation of mutual respect, shared values, and a collaborative mindset preparing students to build upon these skills in more advanced interprofessional settings.
- 2. Structured Developmental Models Enhance Learning:** Organizing IPEP activities around developmental stages — Cooperation, Coordination, and Collaboration — provides a clear framework for progressive skill-building, allowing students to gradually deepen their understanding and application of interprofessional competencies as they advance through their programs.
- 3. Tailored Activities Meet Diverse Educational Needs:** Differentiating activities based on professional roles and educational levels — such as the Interprofessional Geriatric Experience for dental hygiene students and the IPEP Intramural Rotation for DDS students — ensures that the program addresses the specific learning objectives and clinical readiness of each group.
- 4. Integration of Real-World Contexts Adds Value:** Incorporating case-based learning and practical scenarios, such as those in the Partnership for Population Health and the Pharmacy and Social Work Consult Programs, enhances students' ability to apply theoretical knowledge to real-world challenges fostering critical thinking, problem solving, and team-based care skills.

- 5. Reflection and Assessment Drive Improvement:**

The emphasis on reflection, self-assessment, and peer evaluation provides learners with opportunities to critically examine their growth and identify areas for further development. These methods also inform faculty about program effectiveness, allowing for iterative improvements.

- 6. Cross-Disciplinary Collaboration Is Key to Success:**

Collaboration with other schools and departments across UNC-CH has been instrumental in the success of the IPEP program. Sharing resources and best practices has strengthened program delivery and highlighted the value of diverse perspectives in IPEP.

These lessons underscore the importance of intentional design, adaptability, and a focus on outcomes in IPE. They also highlight the need for continued innovation to prepare health care professionals for the evolving demands of team-based care in modern health care systems.

## Conclusion

UNC-CH's IPEP program demonstrates a comprehensive approach to preparing health care professionals for collaborative, team-based care. By integrating meaningful interprofessional experiences into the dental and dental hygiene curricula, the program equips students with the skills necessary to navigate complex health care systems and improve outcomes for diverse populations.

Through carefully designed activities, such as case-based learning, telehealth simulations, and population health interventions, students gain practical experience in communication, leadership, and coordination across disciplines. The program's commitment to fostering a culture of collaboration is further reinforced by its emphasis on reflection, self-assessment, and competency-based evaluation.

By bridging theory and practice, the IPEP program not only enhances the educational experience of its participants but also addresses critical gaps in health care delivery. Graduates of this program are well positioned to lead efforts in transforming health care systems, ensuring better outcomes for patients and communities alike. UNC-CH's IPEP program serves as a model for IPE, setting a standard for innovation and excellence in health professions training.

**Table A: IPE Curriculum Mapping for the University of North Carolina Dental Hygiene Program**

Year	Semester	Course	Activity	2023 IPEC Competencies Addressed	Other Professions Involved	Assessment
1	Summer–Fall	N/A	Let’s Grow Together	RR5, C5	Nursing, Pharmacy, Speech-Language Pathology, Clinical Rehabilitation and Mental Health Counseling	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation  Self-reflection worksheet
1	Summer–Fall	N/A	Health Professions Orientation	Finalizing updates for 2023 competencies	Nursing, Public Health, Pharmacy, Department of Health Sciences, Biomedical Engineering, Business	N/A
1	Fall	N/A	Meet Your Neighbors	VE5, RR4, C1, C5, TT2, TT6	Nursing, Social Work, Pharmacy, Audiology, Clinical Lab Science, Clinical Rehabilitation and Mental Health Counseling, Medicine, Occupational Therapy, Physician Assistant, Physical Therapy, Radiologic Sciences, Speech-Language Pathology, Biomedical Engineering, Business	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation  Narrative pedagogy—students write personal reflections, debrief, group reflection
2	Fall	N/A	Can You Hear Me Now?	VE2, VE4, VE5, VE6, VE7, VE11, RR5, C2, C7, TT2, TT5, TT9	Nursing, Social Work, Pharmacy, Clinical Rehabilitation and Mental Health Counseling, Medicine	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation
2	Fall	DHYG 352	Partnership for Population Health	VE1, VE5, VE7, RR1, RR3, RR4, C1, C2, C3, C4, C6, TT3, TT4, TT5, TT10	Medicine, Nursing, Pharmacy, Public Health, Speech-Language Pathology	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation  Peer assessment
2	Fall	DHYG 367	Pharmacy/ DHYG/DDS Case Study	Finalizing updates for 2023 competencies	Pharmacy	Content evaluated within course examinations
2	Spring	DHYG 377	Interprofessional Telehealth	VE3, VE9, RR1, C2, C4, TT6, TT8	Medicine, Nursing, Occupational Therapy, Physical Therapy	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation
2	Spring	DHYG 377	Interprofessional Geriatric Experience	VE5, RR4, C1, C2, C4	Medicine, Nursing, Occupational Therapy, Physical Therapy, Social Work, Pharmacy	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation



**Table B: IPE Curriculum Mapping for the University of North Carolina Predoctoral Dental Education Program**

Year	Semester	Course	Activity	2023 IPEC Competencies Addressed	Other Professions Involved	Assessment
1	Summer–Fall	DENT 500 Basecamp DENT 540	Let’s Grow Together	RR5, C5	Nursing, Pharmacy, Speech-Language Pathology, Clinical Rehabilitation and Mental Health Counseling	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation Self-reflection worksheet
1	Fall	DENT 500 Basecamp	Health Professions Orientation	Finalizing updates for 2023 competencies	Nursing, Public Health, Pharmacy, Department of Health Sciences, Biomedical Engineering, Business	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation.
1	Fall	DENT 540	Meet Your Neighbors	VE5, RR4, C1, C5, TT2, TT6	Nursing, Social Work, Pharmacy, Audiology, Clinical Lab Science, Clinical Rehabilitation and Mental Health Counseling, Medicine, Occupational Therapy, Physician Assistant, Physical Therapy, Radiologic Sciences, Speech-Language Pathology, Biomedical Engineering, Business	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation Narrative pedagogy—students write personal reflections, debrief, group reflection
1	Spring	DENT 543	Inter-professional Telehealth	VE3, VE9, RR1, C2, C4, TT6, TT8	Medicine, Nursing, Occupational Therapy, Physical Therapy	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation. Peer to peer assessment using quantitative rubric
2	Fall	DENT 641	Can You Hear Me Now?	VE2, VE4, VE5, VE6, VE7, VE11, RR5, C2, C7, TT2, TT5, TT9	Nursing, Social Work, Pharmacy, Clinical Rehabilitation and Mental Health Counseling, Medicine	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation
2	Spring	DENT 652	Partnership for Population Health	VE1, VE5, VE7, RR1, RR3, RR4, C1, C2, C3, C4, C6, TT3, TT4, TT5, TT10	Clinical Rehabilitation and Mental Health Counseling, Nursing, Public Health, Pharmacy	Student self-assessment of their confidence and self-efficacy pre- and post-didactic IPEP activity participation Peer assessment
3	Fall	DENT 743	Pharmacy/ DHYG/DDS Case Study	Finalizing updates for 2023 competencies	Pharmacy	Content evaluated within course examinations
3-4	Fall / Spring	DENT 711 DENT 811	IPEP Intramural Rotation	Finalizing updates for 2023 competencies	Pharmacy, Social Work	Situation, Background, Assessment, Request (SBAR) consult

# Harvard School of Dental Medicine

*Elizabeth Alpert, DDS, MPH; Christine Riedy, PhD, MPH; Lisa Thompson, DMD; and Tien Jiang, DMD, MEd*

## Introduction and Program Development

Founded in 1867 in Boston, Massachusetts, the Harvard School of Dental Medicine (HSDM) was the first US dental school with a university-affiliated medical school where predoctoral dental and medical students learned together. The oral-systemic health connection is foundational to HSDM, reflected in the school's [mission](#) to “foster a community of diverse global leaders in education, research and clinical innovation dedicated to improving human health by integrating dentistry and medicine.” By 2015, a new curriculum was implemented in both HSDM and Harvard Medical School (HMS) to further strengthen the historical foundation of oral health and primary care integration.

## Program Components by Year

### First Year

During their first year, predoctoral dental students engage in IPE experiences through designated coursework and clinical observation. Taught by faculty from HMS, the first-year curriculum focuses on fundamentals of medicine.

1. During orientation, both dental and medical students complete a week-long course called **Introduction to the Profession (IN555)**, which is designed to support students' transition from undergraduate students to their new role as physicians-in-training. Through a combination of lectures and group discussions, the course explores topics including health equity, professionalism, cultural and structural humility, community engagement, digital professionalism, and the Interprofessional Education Collaborative (IPEC) competencies.
2. The **Practice of Medicine (POM100)** course extends over the entire year and establishes a clinical foundation to support dental and medical students in their future practice of medicine with “excellence, integrity, and compassion.” This course complements simultaneous basic science and preclinical coursework. Learning objectives encompass topics in professionalism and clinical skills. Embedded IPE experiences include weekly half-day rotations in the Harvard Dental Center's (HDC's) Teaching Practice (TP) through the **Foundational Continuity Clinic (FCC)**, where first-year dental students observe fourth-year peers engaged in primary care clinical experiences within a dental setting, supervised by primary care physicians. Additionally, dental students

are assigned to hospital sites, including Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Massachusetts General Hospital, and Cambridge Health Alliance. There, they spend a day conducting patient and physical examinations followed by a debrief of their experiences, under the supervision of Internal Medicine attendings.

3. Beginning with the HMS and HSDM classes of 2027, there was a new addition to the curriculum: the **BRIDGES (PWY210 and PWY211)** courses. These courses extend the amount of time spent in the medical school with additional clinical rotations of medical specialties (e.g., Obstetrics and Gynecology, Surgery, Otolaryngology, Geriatrics, and Pediatrics).

### Second Year

Throughout the second year, students are immersed in IPE through guest lectures, designated IPE sessions, and clinical rotations.

1. Numerous physicians deliver guest lectures focusing on the connections between oral and systemic health. For example, oncologists discuss their experiences with oral manifestations of disease among their patients and share clinical cases of cancer metastases presenting in the oral cavity, and a neurobiologist presents a lecture on diagnosis, characterizations, and treatment of oral pain. Through these sessions, students gain an understanding of applied medical-dental integration in practice to inform patient-centered care.
2. **The Emergent Clinical Experiences (SDM245)** course, designed to facilitate meaningful clinical learning experiences for students, contains a specific component on IPE, aligned with the IPEC Core Competencies. This includes four mandatory IPE sessions as part of the Collaborative Interprofessional Education (CIPE) program held at a neighboring institution, the Massachusetts College of Pharmacy and Health Sciences. These sessions are intended to help students understand actionable implementation of medical-dental integration as well as appreciate the complementary roles of each member of the interprofessional team. Facilitated by faculty members from both institutions, these sessions are attended by dental, social work, and pharmacy students. Topics include (1) Pregnancy and Oral Health,

(2) Asthma, (3) Geriatric Dental Care, and (4) Mental Health and Anorexia. The course also involves a series of rotations, including two half-days spent in a Geriatrics clinical session. This rotation is facilitated by geriatric dentists, a social worker, and a behavioral scientist.

Session objectives address integration of the [5 Ms of Geriatrics](#) into clinical care, experiential learning about the aging process through a simulation suit, and the importance of language in opposing ageism.

3. This cohort experiences three half-day rotations in the Oral Medicine clinic at Brigham and Women's Hospital, where they observe both residents and attendings in a clinic setting. Interactions include consultations with other services, such as Infectious Disease.
4. The **Principles of Oral Health (SDM141)** course provides students with a foundation in performing a comprehensive dental examination, including collecting information to identify diagnoses and develop treatment plans. Various formats supporting active learning are implemented, including interprofessional group discussions to examine complex, multidisciplinary patient cases.

### Third Year

As in the second year, students interact with lecturers from varying health professions in different courses throughout the year. **The Advanced Surgical Treatment (SDM304)** course includes presentations from multiple physicians, including oral and maxillofacial surgeons, plastic surgeons, a pulmonologist, an endocrinologist, and an anesthesiologist. Additional IPE opportunities occur through course presentations by pharmacists, a speech pathologist, and a social worker.

Students have another series of three half-day rotation sessions in the Oral Medicine clinic at Brigham and Women's Hospital, where they engage with residents, attendings, and physicians from other services including Infectious Disease.

### Fourth Year

In addition to IPE opportunities in coursework, students can pursue additional IPE experiences through elective outreach and clinical opportunities.

1. Through the **Leadership in Oral Health and Primary Care (SDM438)** course, fourth-year students again participate concurrently with the **Practice of Medicine Foundational Continuity Clinic (FCC)** in the HDC Teaching Practice. Interprofessional teams, with the year 4 dental students as the leaders in oral health care delivery, work with medical and dental professionals to provide various forms of treatment to the patients of the dental clinic and serve as senior student mentors to the

year 1 students.

2. To provide an elective opportunity for students in the **Practice of Dentistry II (POD2)** course, HSDM partners with the Massachusetts College of Pharmacy and Health Sciences in a [program designed to reach older adults residing at home in underserved communities](#). An interprofessional team of pharmacy, dental hygiene, and dental students screen residents, with each student leading a different segment of the screening. Pharmacy students and faculty members first review medical histories and medications, then evaluate an individual's blood pressure. Dental hygiene and dental students conduct clinical examinations, provide oral hygiene instructions, and provide referral information for individuals in need of a dental home.
3. First piloted among the class of 2025, the new Aging and Geriatric Track provides multiple IPE opportunities for students who elect to participate. This includes experiences shadowing multiple providers (including physicians, nurse practitioners (NPs), and physical therapists) at [Element Care PACE \(Program of All-Inclusive Care for the Elderly\)](#), which provides opportunities to observe interdisciplinary health care administered for medically and socially complex community-dwelling older adults.

### Across Years

Additional IPE experiences span the predoctoral curricula, including clinical engagement and outreach opportunities.

1. Through the [Nurse Practitioner/Dentist Model](#), third- and fourth-year students have the opportunity to collaborate with an on-site NP providing primary care services colocated with the HDC Teaching Practice. Besides [facilitating experiential learning opportunities consistent with the IPEC Core Competencies](#), this model offers important interprofessional practice implications facilitating patient-centered care delivery.
2. Annually, HSDM upperclassmen are encouraged to volunteer for Oral Medicine Day, part of the Practice of Medicine course. This event is dedicated to teaching all HMS medical students how to conduct a proper oral cancer screening and fluoride varnish application.
3. HSDM's [ACTION \(Action for Children and Teens in Oral Health Need\) clinic](#) is a student-led pediatric dental clinic, which partners with the Cambridge Health Alliance (CHA). Last year, students organized a program where they brought multiple medical students into the volunteer clinic to observe and learn principles of fluoride varnish application.

4. The [Office of Community-Centered Medical Education](#) organizes a half-day session to discuss the bidirectional relationship between the HMS/HSDM and the community. After the lecture, students are split up into 20 or so groups to visit community organizations to learn about their projects, mission, and vision.

## Lessons Learned and Conclusions

It is important to note how aligning courses across different health care disciplines with different timetables for IPE education and training presents challenges; however, unique characteristics of HSDM facilitate IPE opportunities across the predoctoral experience. First, there is a strong historical context of medical-dental integration, from the school's establishment in 1867. The current mission, vision, and values reflect core IPE principles, which translates to experiential IPE opportunities for learners. HSDM is an exceptionally small institution with only 35 students per class, which is conducive

for partnering on education innovations with other academic health care institutions. Additionally, HSDM's geographic location in the heart of Boston's Longwood Medical Area places the school in close proximity to a prestigious system of medical and academic institutions. The small class size fosters a strong sense of community and facilitates students' ability to customize their HSDM experiences, translating into an engaged student body that has created and championed additional IPE experiences beyond the curriculum. Finally, graduates of this curriculum create a network of dentists and physicians who consult each other and provide warm handoffs for patients, which ultimately strengthens our health care system.

## Acknowledgments

Thank you to the following HSDM students for their input: Betty Ben Dor (DMD25), Michael Friedman (DMD25), Tara Zhou (DMD25), Amy Lin (DMD26), Christina Xu (DMD26), and Krisha Patel (DMD26).

# Hunt School of Dental Medicine at Texas Tech Health El Paso

*Salma M. Elwazeer, BDS, MDS, MPH, FRSPH, FICD*

## Introduction

Since its inception in 2021, the Hunt School of Dental Medicine (Hunt SDM) at Texas Tech Health El Paso has recognized the importance of being part of a Hispanic Serving Institution (HSI) located on the US-Mexico border. Hunt SDM is committed to providing quality, evidence-based, and culturally competent collaborative care for the underserved population of the border region. IPE has been an integral component in fulfilling this commitment to promote enhanced patient care through collaboration among students across different health professions. This vision aligns with the institution's Quality Enhancement Plan (QEP) and Team-based, Effective, Collaborative, Healthcare (TECH Ready) program, targeting IPE to better provide whole-person care for the region's diverse population.

## Objectives and Benefits

The IPE program at Texas Tech Health El Paso is based on [the IPEC Core Competencies \(2023\)](#), which serve as guidelines for developing key interprofessional skills. The main goals of IPE at Hunt SDM include:

**Respect and Shared Values:** Students will learn to work effectively with individuals from other professions, fostering mutual respect and shared values.

1. **Role Understanding and Patient Care:** Students will apply their knowledge of their own roles and those of other professions to meet patient health care needs and promote population health.
2. **Effective Communication:** Students will enhance communication with patients, families, and other professionals, supporting collaborative approaches to health promotion and disease prevention.
3. **Team Dynamics and Patient-Centered Care:** Students will apply the principles of team dynamics to plan, deliver, and evaluate patient care programs that are safe, efficient, effective, and equitable.

These goals help dental students become competent working in health care teams for effective patient service, ensuring that health gains are achieved.

## Program Development

IPE was woven into the predoctoral dental curriculum from the early design phases of Hunt SDM. Implementation included recruiting a school-based IPE director to lead both longitudinal and event-based activities. The core program components during the four years of the dental program are highlighted below.

### Year 1: Longitudinal IPE Experiences

In Year 1, dental students participate in their public health–based curriculum through the Dental Society, Community, and the Individual (DSCI) course, working with first-year medical students for the entire year. The goal is to achieve team building and develop collaborative competencies throughout the year. The interprofessional teams engage in small-group processes, community-based experiences, and health care system simulations that rely on teamwork, cooperation, and communication among disciplines.

#### Community Immersion

One of the cornerstones in the Year 1 dental/medical IPE experience is the Community Immersion Program. This three-week experience, at the beginning of the academic year for students from Texas Tech Health El Paso Dental and Medical Schools, emphasizes teamwork and community engagement. In this immersive experience, students are engaged in small work groups to complete various community-based IPE activities. Through these activities, students develop a deeper understanding of social determinants of health, cultural competence, and the importance of interprofessional collaboration.

The focus of this program is to immerse dental and medical students in real-world environments to learn how to address cross-cultural health issues. This immersive experience includes various community-based experiential interprofessional education opportunities. Highlights of this immersion include:

- **Community Assessment:** Students collaborate in their interprofessional teams to complete community assessments through [windshield survey observations](#), key informant interviews, and community member surveys. This allows for a broader view of health care beyond individual treatment.
- **Patient-Centered Interviewing Simulation:** Dental and medical students apply interviewing skills to enhance patient-centered care by participating in simulation experiences with [standardized patients](#). Students observe the role that collaborative care can play in addressing the needs and backgrounds of patients.
- **Cultural Competence Media Campaign:** Dental and medical students are involved in consensus-building activity to identify the culturally competent traits that define their interprofessional class. Then, they develop videos, fliers, brochures, and any other promotional materials based on these identified cultural competency aspects of their cohort to develop a campaign about how to be a culturally competent clinician across the US-Mexico border.
- **Poverty Simulation:** Dental and medical students engage in an immersive simulation experience to role-play a month in the lives of low-income families living in poverty. The simulation helps students understand the social and economic challenges faced by underserved populations and emphasizes the connection between social determinants of health and health care access. Additionally, it aims to inspire students to develop a deeper sense of empathy and be the catalysts of change for their patients and communities in their future professional lives.
- **Conversational Spanish:** Spanish is a required element of the dental and medical curricula. Dental students receive didactic and experiential training in conversational and dental-related Spanish across 6 semesters of the dental school journey. During this immersion, students are assigned to an interprofessional medical/dental team based on their initial proficiency level. Student teams participate in didactic and immersive community-based experiences highlighting the role of language in fostering patient-centered care, especially among an 83% Hispanic population in West Texas. This unique experience is designed to foster cultural and linguistic competence and improve communication with patients.

Following immersion, dental and medical students continue to participate in their public health curriculum in a longitudinal interprofessional year-long environment. Activities throughout the year include a motivational interviewing simulation, a value-based care workshop, a referral simulation highlighting the role of social workers and community health workers (CHWs), and research methodology game-based learning (GBL) and task-based learning (TBL) interactive curricula. Dental students also interact with physical therapy (PT) students through an ergonomic exercise in the dental simulation lab in Year 1.

#### Institutional Common Core IPE Events for Year 1

The first year of dental school also emphasizes the institutional common core IPE events that involve not only dental and medical students but also students in nursing, pharmacy, and physical therapy. These four core IPE events are aligned with

the [2023 IPEC Core Competencies](#) to ensure that first-year students have the foundational knowledge and skills in interprofessional practice. Institutional common core IPE events include:

- **IPE Orientation Module:** An asynchronous, interactive introduction to IPE in which students explore the core competencies of values and ethics, teamwork, roles and responsibilities, and communication.
- **Roles and Responsibilities TBL/GBL Event:** Students engage in an individual readiness assurance test (iRAT) followed by collaborative team-based case discussions highlighting the roles and responsibilities of the various professions, using the Kahoot! platform in a GBL environment. Students discuss the roles and responsibilities across the various participating professions, acknowledging the value of collaboration in ensuring whole-person care. A debriefing session follows the Kahoot! exercise, allowing reflections and immersive interactions among all students.
- **TeamSTEPPS Simulation Event:** [TeamSTEPPS \(Team Strategies and Tools to Enhance Performance and Patient Safety\)](#) is an evidence-based curriculum initially developed by the Department of Defense (DoD) in collaboration with the Agency of Healthcare Research and Quality (AHRQ) focusing on strategies to enhance patient safety by optimizing team performance. First-year dental and medical students collaborate interprofessionally on the initial training. After that, they consolidate their experiences by engaging in interprofessional teams including medical, nursing, pharmacy, and physical therapy students from two academic institutions, practicing navigating simulated clinical scenarios with standardized patients, using the TeamSTEPPS tools to help enhance communication, collaboration, team performance, and patient safety.
- **Ethics Case-Based Learning (CBL) Event:** Interprofessional teams of first-year dental, medical, nursing, pharmacy, and physical therapy students engage in CBL discussions using narrative medicine cases regarding the ethics of pain management concerning opioid use. Through this interprofessional event, students apply the use of ethical frameworks to real-life clinical challenges as related to each of the involved professions in a collaborative manner.

### Years 2–3: Further IPE Collaboration

In their second and third year, dental students remain actively involved with other professional peers. Significant activities include:

- **Fluoride-Related Activities:** Dental students and pre-clerkship medical students work together to apply fluoride varnish in the simulation lab and at the Oral Health Clinic. Mentored by senior dental students and supervised by dental school faculty, medical students practice applying topical fluoride varnish on typodont models of the oral cavity before practicing the application on each other. This workshop not only enhances students' clinical skills but also fosters an innovative interprofessional opportunity to integrate preventive oral health in medical education and practice. Following these experiences, dental and medical students debrief with faculty mentors regarding the importance of collaboration between medical and dental professions in the scope of prevention to deliver comprehensive, patient-centered care. This collaboration reinforces oral health as an integral part of general health and helps students to better understand the role of both medical and dental professionals in preventive oral health care.
- **Interprofessional Homelessness Case-Based Exercise:** The dental students join students from the University of Texas El Paso's schools of nursing, pharmacy, social work, physical therapy, occupational therapy, and speech-language pathology in a case-based exercise on homelessness and its associated social determinants of health. This activity enhances communication and collaboration among health professionals toward addressing special health care needs of underserved populations, fostering high-quality and person-centered care.

### Years 3–4: Real-World Interaction and Community Engagement

In years 3 and 4, there are opportunities for authentic service-based interprofessional practice through the Practicum, an established requirement of the predoctoral curriculum at Hunt SDM. The Practicum is a two-semester experience where dental students work with various community agencies across the US-Mexico border on a public health issue pertinent to oral health. Students work in teams to develop a health promotion intervention, implement it at the Practicum site, evaluate its effectiveness, and document their findings in a white paper that can be shared with community partners and policymakers. During the Practicum, dental students work with myriad health students, residents, and professionals, including those in the disciplines of family medicine, OB/GYN, emergency medicine, and surgery. The Practicum also provides opportunities to engage with allied health care providers in community health centers.

## Competency Assessment

Assessing competency in IPE among graduates of Hunt SDM is a cumulative approach including various assessment methods. As outlined above, dental students engage in various IPE experiences that are associated with multilevel assessments. Formative assessment methods include clinical demonstrations, CBL, GBL, TBL, and group discussions. Students also keep portfolios documenting their academic progress, including their interprofessional learning experiences and reflections, thereby enabling them to gauge progress in applying IPE principles in professional practice. Summative assessment methods include written exams and simulation evaluations (ex: TeamSTEPPS) using standardized rubrics to assess students' performance in applying IPE collaborative skills. Clinical competency is assessed through Clinical Competency Exams (CCE) for clinical procedures that include interdisciplinary and interprofessional collaboration such as consultations and referrals. Examples include CCE for diagnosis and treatment planning for patients with special health care needs, pathological lesions, and dental implants. Managing those procedures requires collaboration with other members of the health care team to ensure optimal high-quality care.

## Lessons Learned

One of the major challenges to IPE implementation at Hunt SDM includes managing schedules across various health

disciplines, particularly for the longitudinal IPE learning experiences. To navigate this issue, faculty and administration from all participating programs strive to coordinate efforts to align curricular requirements across disciplines to meet accreditation requirements for each program. Having an institutional IPE office helped in providing additional resources and streamlining the IPE common core events, ensuring that all students have the basic foundational IPE knowledge and skills by the end of Year 1. Hiring an IPE director in the dental school with a strong background in collaborative public health and clinical practice helped establish a robust IPE program. Finally, student and faculty feedback is always considered for continuous improvement in light of the evolving needs of the health care system, ensuring the suitability of the program to real-world applications.

## Conclusion

Hunt SDM's IPE program prepares students for collaborative health care practice by fostering communication and teamwork through longitudinal IPE experiences in Year 1, supported by diverse events and real-world applications throughout the dental school journey. Working with peers from various health professions, dental students gain insight into interdisciplinary roles and develop skills to improve health outcomes for diverse populations, ensuring that they are ready to address complex community health care needs.

# Midwestern University

*Eve B. Hoover, DMSc, PA-C, DFAAPA*

Midwestern University (MWU) is a graduate education institution in Glendale, Arizona, dedicated to academic excellence and patient-centered care. The campus consists of only graduate-level health care professional programs, including physician assistant, dental medicine, nurse anesthesia, nurse practitioner, occupational therapy, optometry, osteopathic medicine, pharmacy, physical therapy, podiatric medicine, precision medicine, public health, biomedical science, speech language pathology, cardiovascular science, and veterinary medicine.

Given the unique nature of the campus, filled with a variety of interprofessional medical learners and faculty, the university provides expansive, innovative opportunities to model team-based, patient-centered care essential to health care practice. The university prioritizes its One Health Initiative,

which explores how the health of humans is connected to the health of animals and the environment. The university incorporates many interprofessional, hands-on, and engaging strategies to deliver a relevant medical-dental integration curriculum. The goal of this interprofessional medical-dental integration content is to expand awareness of the systemic connection between the mouth and the body, recognize the importance of prevention regarding oral health, gain confidence and effectiveness with patient education, highlight the value of learning from and collaborating with interdisciplinary health care teams, and empower future health care providers to practice patient-centered care with attention to social determinants of health.

## Sampling of Collaborative Medical-Dental Integration IPE Activities

1. Physician Assistant (PA) and Dental Medicine Collaboration
  - a. For more than a decade, Dental Medicine faculty have provided oral health didactic material to the PA students, followed by an examination assessment. The PA students are also assigned the Smiles for Life online curriculum ([Smiles for Life Oral Health](#)), which focuses on many aspects of prevention, detection, and treatment of oral health conditions.
  - b. Dental Medicine faculty and students collaborate with PA faculty and students to provide an annual fluoride varnish workshop. Dental students deliver a lecture on fluoride varnish application. Then, the dental faculty and students, along with PA faculty, guide the PA students as they practice hands-on fluoride varnish application.
  - c. The dental and PA students participate in a service-learning opportunity, compiling 500 Smile Bags (toothbrush, toothpaste, floss, SPF lip balm, oral health infographic) to distribute at a local clinic serving patients experiencing homelessness and other hardships.
  - d. The dental and PA students participate in Food for Thought: Oral Health and Nutrition, an activity that looks at oral health through an equity lens. Students are given university café credit to purchase a meal, with a focus on nutrition, anticarcinogenic food properties, access, cost, and social determinants of health.
  - e. To highlight the importance of oral health within patient care, HEENT (head, eyes, ears, nose, and throat) material throughout the entire curriculum was modified to HEENOT, adding an “O” for “oral cavity.” Oral health risk assessment is taught in the Preventative and Developmental Medicine course, and a question about the last dental visit is required in the Medical Interviewing template. All these elements are assessed in a written multiple-choice examination and standardized patient encounters.
  - f. PA students and faculty collaborate with dental students and faculty at local service-learning events for the community such as Give Kids a Smile and Super Sealant Saturday. While the dental students provide hands-on assessment and treatment, the PA students provide oral health patient education and nutrition information for patients and families.
  - g. Incorporation of oral health disparity discussions into the Cultural Competency lecture within a Health Professionalism course provides illustrative examples of social determinants of health.
  - h. An MWU PA faculty member works on an interdisciplinary team of PAs, NPs, and dentists developing a monthly medical-dental integration curricular resource titled Oral Health Fillings, Bits and Bites (<https://cipcoh.hsdm.harvard.edu/oral-health-fillings-bits-and-bites>).
2. Osteopathic Medicine Medicine (DO) and Dental Medicine Collaboration
  - a. Dental faculty lead a Nutrition and Oral Health remote-learning lecture, which was added to the DO nutrition course for third-year DO students.
  - b. Dental faculty lead two recorded lectures for fourth-year DO students to supplement their Smiles for Life curriculum: (1) Interprofessional Communication Strategies for Medical-Dental Communications for Chronic Diseases and Sleep Apnea; and (2) HPV and Oral and Oropharyngeal Cancers in an Integrated Approach.
  - c. In 2025, the dental faculty will launch an elective course for first-year DO students. The course is designed to familiarize medical students with interprofessional concepts including the oral-systemic connection, dental trauma, mutual care of chronic diseases, dental oncology, smoking cessation, sleep medicine, caries prevention in primary care settings, nutrigenomics, oral manifestations of commonly used medications, polypharmacy and deprescribing, HPV-related head and neck cancers, and an interprofessional approach to prevention and treatment. The course is taught via five two-hour, in-person lectures.
3. All MWU Medical Learners from All Campus Programs
  - a. Interprofessional Health Care course: All medical learners work together on medical cases to better understand each profession’s role and the benefits of interprofessional practice.
  - b. Interprofessional Health Outreach through Medicine and Education (HOME) clinic: All medical learners work together with interdisciplinary faculty during service-learning events, providing compassionate, evidence-based, patient-centered health care to underserved members of the community.



4. Dental Medicine, Physician Assistant, and Pharmacy
  - a. Animated, interactive oral health modules were developed by dental, PA, and pharmacy faculty. These modules are incorporated as assignments in the PA and pharmacy curricula. The dental faculty used an innovative platform called Powtoon to produce 7–9–minute animated videos focused on key topics essential in primary care practice. The videos include “Medicine and the Mouth,” “Preventing the Effects of Polypharmacy,” “Xerostomia and Oral Consequences,” and “Many Faces of Candida”. The modules are intended to be completed in a self-directed, self-paced fashion and support many styles of learning. The developers of the videos have shared this free, relevant, and helpful resource as an educational tool for medical learners. The modules have received very positive student feedback.<sup>1</sup> Students from many professions also indicate increased likelihood of future interprofessional collaboration.<sup>1</sup>
    - i. Dental Bite-Sized Bits Oral Health Module Links
      - [Unit #1: Medicine and the Mouth](#)
      - [Unit #2: Preventing the Effects of Polypharmacy](#)
      - [Unit #3: Xerostomia and Oral Consequences](#)
      - [Unit #4: Many Faces of Candida](#)
    - b. Dental faculty deliver a lecture on orofacial pain and discomfort for pharmacy students.
5. Dental Medicine and Nurse Practitioner
  - a. Oral health content is delivered by dental faculty with a focus on medical-dental integration.
6. Osteopathic Medicine, Physician Assistant, Nurse Practitioner
  - a. Professionals distribute Smile Bags (toothbrush, paste, floss) to patients and community members in need.

## Lessons Learned, Challenges, and Tips

A primary challenge to curricular integration of oral health content appears to be consistent among many different programs. The prospect of incorporating additional content into an already packed, content-heavy curriculum may initially appear as a daunting task. One of the things that was most helpful to our MWU team was sprinkling the medical-dental integration content into multiple different courses in small yet meaningful ways, rather than requiring a curricular overhaul.

Another necessity for successful interprofessional medical-dental integration is sustainability. Given our multidisciplinary educational institution, we have many educators from a variety of professions who are passionate about medical-dental integration initiatives, and the enthusiasm is also mirrored by students. With many professionals involved, it is more likely to be sustainable and less likely to be burdensome to incorporate. Additionally, welcoming students to learn with and from one another makes the educational experiences more meaningful and provides a reminder that within health care, we do not work in silos.

Partnering with local and national organizations for grant funding made these initiatives possible. Delta Dental of Arizona and nccPA Health Foundation were generous supporters of this work. Delta Dental also donated all of the materials for the Smile Bags that were incorporated into service-learning opportunities by Osteopathic Medicine, Physician Assistant, and Nurse Practitioner programs. Another valuable partnership was with the Center for Integration of Primary Care and Oral Health (CIPCOH), a national resource for system-level research on oral health integration into primary care education programs. CIPCOH provides valuable, relevant, easy-to-access, free resources for medical-dental integration. The organization selects one oral health champion from each state to assist primary care programs with medical-dental integration efforts. The CIPCOH Arizona oral health champion is a member of the MWU PA program faculty.

Finally, it is encouraging that buy-in regarding the importance of medical-dental integration within primary care practice was universal at our institution. All faculty welcomed the opportunity to incorporate these elements and were eager to develop opportunities for interprofessional education. One of the strategies to communicate the importance and relevance of this content, if buy-in becomes a challenge, is to highlight each profession’s initiatives and policy statements, as many professional organizations comment on the importance of oral health. Additionally, highlighting oral health topics that are included on each profession’s certification exam and the alignment with professional competencies emphasizes the importance of interprofessional integration.

## Midwestern University Use Case Reference

1. Denise A. Mills, Anita S. Chu, Andrea Burns, Eve B. Hoover, Jennifer Wild, Gretchen Post, Robyn Sears, Amber Herrick, Deborah Black, Eugenia P. Roberts, and Bradley S. Roberts, “Dental Bite-Sized Bits: A Module for Teaching Common Oral Health Conditions to Multidisciplinary Students,” *Medical Science Educator* 33, no. 4 (February 2023): 451-458.

# NYU Langone Dental Medicine Postdoctoral Residency Programs

*Mary E. Northridge, PhD, MPH; Mitchell Caponi, MPH; Joanne Tzanis, MA; Melissa K. James, PhD; Margaret K. Mason, DMD, MA; and Martin Lieberman, DDS, MA*

## Introduction

The mission of the five [NYU Langone Dental Medicine Postdoctoral Residency Programs](#) (Advanced Education in General Dentistry (AEGD), Advanced Education in Pediatric Dentistry (AEPD), General Practice Residency (GPR), Dental Anesthesiology, and Endodontics) is to serve, teach, and discover. This mission is achieved through an integrated academic culture devoted to patient care, education, and research. While the scale of our postdoctoral training programs is larger than that of any other US dental residency program, the transferable best principles<sup>1,2</sup> from our IPE activities presented here were selected to be especially applicable to federally qualified health centers (FQHCs) such as [Family Health Centers at NYU Langone](#), the sponsor of the three primary care dentistry programs (AEGD, AEPD, and GPR) that form the basis of this use case.

## Goals and Benefits

Even as FQHCs are uniquely positioned to provide integrated, patient-centered care, they experience challenges related to the oral health literacy of patients, providers, and organizations,<sup>3</sup> as well as the challenge of building sufficient capacity to meet the high demand for oral health care services. The long-term goal of IPE activities at NYU Langone Dental Medicine is to improve oral health equity across the life course.<sup>4</sup> The intermediate goal is to enhance access to and delivery of quality health care and social services for vulnerable and rural populations of all ages at more than 110 FQHCs in 30 US states, Puerto Rico, and the US Virgin Islands. The short-term goals are to recruit, train, and employ general and pediatric dentists to become key members of integrated, patient-centered health care delivery teams at FQHCs, Indian Health Service (IHS) facilities, and other ambulatory care organizations in underserved and rural areas of the US and its territories.

## Program Development

The Health Resources and Services Administration (HRSA) provided initial and ongoing support for the IPE activities discussed here, including through current awards for [Postdoctoral Training in General, Pediatric, and Public Health](#)

[Dentistry and Dental Hygiene](#) (grant #D88HP37549 with supplements), [Dental Faculty Loan Repayment Program](#) (grant #D87HP46111 with supplements), and [Ryan White HIV/AIDS Program Part C Capacity Development Program](#) (grant #P06HA45163). The Vice President of Graduate Dental Education, the Vice President of Dental Medicine, the Director of Dental Research, and program directors, deans, chairs, faculty, and staff across NYU Langone Health are all essential in developing, implementing, evaluating, and sustaining these IPE activities for the benefit of our patients, families, and communities. NYU Langone Health is an innovative health care and social service delivery organization that leads the nation in delivering quality, whole-person care and achieves exceptional patient outcomes that are measured through standardized surveys of patient experience and satisfaction.<sup>5,6</sup> All IPE opportunities discussed below are intentionally designed to be flexible during the tenure of residents in their programs (1–3 years) to accommodate their clinical responsibilities, and most are optional, except for certain program-mandated courses.

## Selected Program Components

- 1. Shared Decision-Making (SDM) and Motivational Interviewing (MI) Training:** Empathetic communication lies at the heart of patient engagement. Evidence-based approaches such as SDM and MI are effective at fostering the essential skills to build nonjudgmental provider-patient partnerships and motivate behavioral change based on the life circumstances of patients that shape their priorities.<sup>7,8</sup> Over the course of five years, both in-person and virtual foundational, intermediate, and train-the-trainer workshops, booster sessions, and one-on-one coaching and fidelity monitoring sessions were developed with MI experts and institutional partners and iteratively enhanced by an interdisciplinary grant team for general and pediatric dental faculty and residents.<sup>9</sup>
- 2. Research, Quality Improvement, Educational, and Public Health Projects:** While [Commission on Dental Accreditation \(CODA\) accreditation standards](#) differ by program, most require residents to engage in scholarly activity or clinical research. NYU Langone Dental Medicine thus formed a partnership with NYU Langone Health [Division of Biostatistics](#) and hired scientists

and research staff to promote IPE and interdisciplinary collaboration. Results from a key informant interview study of faculty members conducted at the conclusion of the former Dental Faculty Development and Loan Repayment Program (grant #T93HP30391) led to several recommendations that are being acted upon, including providing structured research opportunities that are patient- and/or clinic-centered, focusing more on quality improvement projects, and considering qualitative and mixed-methods approaches.<sup>10</sup>

### 3. **Advanced Certificate in Public Health (ACPH)**

**Scholarships:** [NYU School of Global Public Health](#) partnered with NYU Langone Dental Medicine and HRSA to offer scholarships to general and pediatric dentistry residents to earn an ACPH designed to enhance knowledge and training in core public health concepts (epidemiology, social and behavioral health, biostatistics, environmental health, health care policy, and public health management and leadership). Delivery of the program through an innovative online format provides residents with the opportunity to complete the certificate while training and to participate in a vibrant online community with public health faculty and fellow students.

4. **Learner-Centered Online IPE Courses:** The NYU Langone Dental Medicine Postdoctoral Programs utilize an online learning management system called [Brightspace](#). Working with an experienced and talented instructional designer to ensure optimal hosting and delivery of the online programming, content experts across institutions and disciplines created IPE courses with modules in developmental disabilities, the social determinants of health, the opioid epidemic, mental health, sugary drinks, teledentistry, and the human immunodeficiency virus (HIV). As innovations in technology, science, adult education, and online platforms become available through the extensive NYU Langone Health operations and resources, the courses and their constituent modules are updated and refined with input from the evaluations completed by learners.

5. **Case Presentations on Oral Health Care for People with HIV (PWH):** [The Ryan White HIV/AIDS Program](#) (RWHAP) provides care, medication, and essential support services to low-income PWH. At Family Health Centers at NYU Langone, integration of HIV services with dental services using a care coordination model has improved access to oral health care for patients with HIV by 80% since the RWHAP Part C grant was funded in 2022. An IPE case study meeting format developed by the grant team and led by the GPR residents involves discussing challenges faced by patients with HIV (stigma, dental hesitancy) and strategies for providing quality oral

health care that meets their often substantial medical, behavioral health, and social needs.

## Lessons Learned

Even as organizational settings can be significantly different, IPE activities may have underlying principles that can be readily adapted by other FQHCs to improve oral health equity. For us, these principles include:

- Practice cultural humility with a lifelong commitment to self-evaluation and self-critique<sup>11</sup>
- Work within organizational structures whenever possible to better ensure sustainability
- Develop strategic partnerships both internally and externally
- Identify clinical champions to promote provider behavioral change<sup>12</sup>
- Prioritize patient-centered care through communication, professionalism, and empathy

## Conclusion

The high cost of dental education and consequent loan burdens contribute to the shortage of dentists who work at community health centers and serve as faculty members.<sup>13</sup> To fill community-based clinical positions and expand the general and pediatric dentistry workforce, the NYU Langone Dental Medicine Postdoctoral Residency Programs are committed to training their residents in IPE and hiring their graduates.

## NYU Langone Dental Medicine Postdoctoral Residency Programs Use Case References

1. Barri Burrus, Mary E. Northridge, Lisa Hund, Molly Green, Kisha Braithwaite, Barbara Sabol, Cheryl Heaton, Henrie M. Treadwell, "Perspectives From the Front Lines of Tobacco Control," *Journal of Health Care for the Poor and Underserved* 17, no.1 (February 2006): 124–142, <https://doi.org/10.1353/hpu.2006.0003>.
2. Mary E. Northridge and Sara S. Metcalf, "Enhancing Implementation Science by Applying Best Principles of Systems Science," *Health Research Policy and Systems* 14, no. 74 (October 2016), <https://doi.org/10.1186/s12961-016-0146-8>.
3. Dominick L. Frosch and Glyn Elwyn, "Don't Blame Patients, Engage Them: Transforming Health Systems to Address Health Literacy," *Journal of Health Communication* 19, no. 2 (October 2024): 10–14, <https://doi.org/10.1080/10810730.2014.950548>.
4. Mary E. Northridge, Anjali Kumar, and Raghbir Kaur, "Disparities in Access to Oral Health Care," *Annual Review of Public Health*, 41 (April 2020): 513–535, <https://doi.org/10.1146/annurev-publhealth-040119-094318>.
5. "Hospital Consumer Assessment of Healthcare Providers and Systems," Health Services Advisory Group and Centers for Medicare and Medicaid Services, accessed November 2, 2024, <https://www.hcahpsonline.org>.

6. Culture Partners, Family Health Centers at NYU Langone Culture Guide, accessed November 29, 2024, <https://culturepartners.com>.
7. France Légaré and Holly O. Witteman, "Shared Decision Making: Examining Key Elements and Barriers to Adoption into Routine Clinical Practice," *Health Affairs* 32, no. 2 (February 2013): 276–284, <https://doi.org/10.1377/hlthaff.2012.1078>.
8. William R. Miller and Stephen Rollnick, *Motivational Interviewing: Helping People Change and Grow*, fourth edition (New York: Guilford Press, 2023).
9. Mary E. Northridge, Matthew Allen, Etienne Franck, Chandni Pipaliya, Manuel R. Vazquez-Sanchez, Andrea B. Troxel, and Martin Lieberman, "Shifting the Focus Using Remote Training on Shared Decision-Making and Motivational Interviewing: A Quantitative Evaluation," *Journal of Dental Education* (in press).
10. Tina Littlejohn and Mary E. Northridge, "On All Cylinders at All Times Indefinitely: Building Capacity to Conduct Patient-Centered Research," NYU Langone Health; *Improving the Quality of Patient Care Series*. 2023;3(2):1 (Internal report available upon request from Dr. Northridge).
11. Melanie Tervalon and Jann Murray-García, "Cultural Humility Versus Cultural Competence: A Critical Distinction in Defining Physician Training Outcomes in Multicultural Education," *Journal of Health Care for the Poor and Underserved* 9, no. 2 (May 1998): 117–125, <https://doi.org/10.1353/hpu.2010.0233>.
12. Alexandra L. Morena, Larissa M. Gaias, and Celine Larkin, "Understanding the Role of Clinical Champions and Their Impact on Clinician Behavior Change: The Need for Causal Pathway Mechanisms," *Frontiers in Health Services* 2, no. 896885 (July 2022), <https://pubmed.ncbi.nlm.nih.gov/36925794/>.
13. Sahar M. Alrayyes, Alan M. Garrett, Charles W. LeHew, and Anne Ashley Compton, "Where Do Pediatric Dental Residents Intend to Practice? Exploring the Influence of Loan Repayment Programs and Other Factors," *Journal of Dental Education* 83, no. 5 (May 2019): 497–503, <https://doi.org/10.21815/jde.019.062>.

# The Ohio State University College of Dentistry

*Danielle Rulli, DHSc, MS, RDH; Cynthia Dougherty, PhD, MSW, FANP; and Elizabeth Trolli, MLT*

## Introduction

Since 2014, The Ohio State University College of Dentistry (COD) has participated in the university's BuckIPE programming as a critical component of our dental hygiene and predoctoral dental curriculum. In 2012, The Ohio State University College of Nursing launched the IPEP (Inter-Professional Education and Practice) Collaborative, which included The Ohio State University COD. From the beginning, COD educational leaders were engaged in the planning and implementation, and students from COD were engaged in the interprofessional learning. In 2018, deans of the health science colleges, including dentistry, released *The BuckIPE Curriculum Vision Report*, describing a comprehensive and innovative interprofessional learning model for their students and proposing a formal centralized coordinating office.

In 2021, the BuckIPE Curriculum became a reality. Designed to foster collaboration and exemplary teams across a variety of health-related disciplines, it has become an opportunity to raise the profile of oral health in primary care while building interprofessional communication and teamwork skills in our students that improve the quality of patient care. The BuckIPE curriculum matches dental and dental hygiene students with peers from other health science schools at our institution, including Athletic Training, Audiology, Medicine, Medical Dietetics, Medical Laboratory Science, Nursing, Pharmacy,

Public Health, Occupational Therapy, Optometry, Physical Therapy, Radiation Therapy, Radiography, Social Work, Sonography, Speech Language Pathology, and Veterinary Medicine. Additionally, specific program offerings within the BuckIPE curriculum include other health care disciplines from different institutions across the state of Ohio to cultivate a team-based approach to patient management and care.

## Objectives and Benefits

The longitudinal program offers dental and dental hygiene students foundational, immersive, and optional mastery scaffolding that prepares students to engage as integral contributors to holistic health care delivery. The primary objective of the BuckIPE curriculum is to promote the foundational competencies of IPE and the application of interprofessional collaborative practice competencies and concepts via immersive cases, simulation, and standardized patient interviews. Students also navigate the impact of social determinants of health and health equity issues on health care delivery and outcomes via an interprofessional approach. Students who engage in the mastery-level programming called Entry to Practice are expected to integrate interprofessional collaborative-practice tenets through practice-based experiences in the community, which require a complex, interprofessional approach to patient care.

## Program Development

Interprofessional practice and education experiences during prelicensure education are essential to meeting accreditation standards and developing future-ready, collaborative oral health care providers. Beginning in 2014, our junior dental hygiene and first-year predoctoral students began participating in the longitudinal BuckIPE curriculum. This program places students on an eight-person interprofessional team. Over 18 months, the interprofessional teams meet twice each semester, allowing students to actively progress together through foundational and immersive interprofessional experiences facilitated by faculty from across the health science disciplines. In the first semester, students participate in a case-based, core IPE curriculum. In the second semester, students move into the immersive component. Progression into the Entry to Practice mastery level is integrated into the fourth-year dental hygiene curriculum and is optional for predoctoral students. Any BuckIPE experience that involves a case/simulation was created with individual patients, community members, and/or community organizations contributing to the case development to ensure that students encounter authentic, real-world examples.

### Program Components

#### 1. BuckIPE Community Cares (Semester 1):

Interprofessional student teams develop a greater understanding of the local community and learn about and utilize tools and resources that positively can confront challenges within our community. Health and social service organizations partner with us to come to campus and share resources and materials about their important community-based work. Students learn how these community partners serve the citizens of central Ohio, contribute to health and wellness, and address social determinants of health. Through the Community Cares experiences, students learn and reflect on how interprofessional teams work together with community partners to advance health and well-being.

#### 2. Fundamentals of Teamwork (Semester 1):

Students work in interprofessional teams to learn about and from a family living in Central Ohio, their social and physical determinants of health, and their goals, needs, and priorities. Students access and share information, discuss key concepts, and consider different viewpoints, while completing a series of exercises together. Through these experiences, students practice and reflect on fundamental skills needed for effective interprofessional teamwork.

#### 3. Tools for Effective Interprofessional Teamwork (Semester 2):

In teams, students explore and practice evidence-based communication and teamwork tools.

Students work together to critically evaluate the use of communication tools in health care and population health scenarios, considering applications to their future practice/careers.

#### 4. Interprofessional Communication (Semester 2):

Students prepare for the experience by completing assignments designed by their respective educational programs. During the experience, students work in interprofessional teams to seek and acquire information, learn about each other's roles and responsibilities, share evidence-based practices, practice essential communication skills, and collaboratively develop an iterative patient-centered care plan.

#### 5. Teams Advancing Health Equity Part I (Semester 3):

Students enhance their understanding of the social determinants of health and/or health and health care inequities that affect patients' lives and begin to develop an appreciation for how interprofessional teamwork addresses these multifaceted patient needs. In the team events, students look at scenarios illustrating these concepts and interact with a standardized patient. Together, students collaborate to identify and address underlying factors to influence health care outcomes and patient experience positively. Students practice providing peer feedback around select interprofessional collaborative practice competencies.

#### 6. Teams Advancing Health Equity Part II (Semester 3):

Students enhance their understanding of the social determinants of health and/or health and health care inequities that affect patients' lives and begin to develop an appreciation for how interprofessional teamwork addresses these multifaceted patient/client needs. In the team events, students look at scenarios illustrating these concepts and interact with a standardized patient. Together, students collaborate to identify and address underlying factors to positively influence health care outcomes and patients' experiences. Students practice providing peer feedback around select interprofessional collaborative practice competencies.

#### 7. Interprofessional Community Scholars Program (Semester 4 and beyond):

Dental hygiene students in their fourth and final year are required to participate in this mastery-level program. This experience is also open to dental students, who participate when their schedule allows. In this program, students experience home visits and community visits with students from the Schools of Audiology, Social Work, Occupational Therapy, Pharmacy, and Physical Therapy, among other students. Additionally, physician assistant students from another institution participate in this program, giving students wider

exposure to collaboration between institutions, which is a key to interprofessional collaboration in the health care delivery system. Together with the community members with whom they visit, IP teams focus on identifying and meeting health and wellness goals, health literacy, digital health literacy, and connecting to needed community and health-related resources.

- 8. Substance Use Disorder (SUD) Experience (Semester 4 and beyond):** Predoctoral students participate in this mastery/practice ready culminating experience in their fourth year. This program is an opioid use disorder (OUD) prevention course in partnership with the Ohio State Attorney General's office. Students engage in a six-week asynchronous course consisting of content including the neurobiology of OUD, OUD treatment, adverse childhood experiences, social determinants of health, motivational interviewing, ethics, and the stigma surrounding OUD. Students then participate in a three-hour synchronous virtual symposium that includes a complex case that student teams collaborate on in a virtual "escape room" setting.

## Lessons Learned

As with most IPE initiatives, the most significant challenge is finding mutually convenient time with other health professions education programs in already packed predoctoral and dental hygiene curricula. The literature has long demonstrated the role of accreditation standards in integrating IPE across health professions education. In the case of the College of Dentistry, the removal of participation barriers must be attributed to a multifaceted and united approach. Firstly, the Office of Interprofessional Practice and Education (OIPE) serves as a centralized coordinator of the BuckIPE curriculum, removing the burden of creating and hosting the IPE experiences from the individual units. For example, the OIPE convenes a

Calendar Workgroup to identify common availability among the health science programs. Secondly, and most importantly, the health professions deans holistically support the OIPE and the BuckIPE curriculum, which has allowed for the longitudinal participation of students. Finally, each college has a designated IPE Champion who is a liaison between the unit and the OIPE. The Champions meet with the OIPE, participate as advisors in the BuckIPE curriculum, advertise IPE activities, and recruit faculty facilitators from their unit. The OIPE offers guidance and support critical to the curricular needs of the individual units. The OIPE meets regularly with the Steering Committee and leadership at the individual units to report outcomes and to gather information and feedback to best support the colleges' continued participation. With support from the College of Dentistry dean and all health professions deans of resources, time, and faculty, the longitudinal program continues to evolve and succeed. Under the unity and guidance of the OIPE, this mutual support across the health professions education colleges has been instrumental in the developing and sustaining the IPE programming.

## Conclusion

The interprofessional education and practice programming at The Ohio State University is critical in meeting the accreditation needs of the predoctoral and dental hygiene education programs. The interprofessional offerings also prepare practice-ready oral health practitioners who can function as members of an interprofessional health care delivery team. By engaging in longitudinal teams in a scaffolded curriculum, the programming gives students a comprehensive understanding of how to work effectively with other health and helping professions. This holistic, interprofessional experience prepares dental and dental hygiene graduates to fulfill [the Quintuple Aim of health care](#).

# Tufts University School of Dental Medicine

*Melanie Morris, LCSW; Nadine M. Tassabehji, PhD, RDN, LDN; Karin Arsenault, DMD, MPH, FACD, FPFA; Kathryn M. Dolan, RDH, MEd; Martha Forero, DDS, MS; Maria C. Dolce, PhD, RN; and Aikaterini Papathanasiou, DMD, DDS, MBA, FICD*

## Introduction

Tufts University School of Dental Medicine (TUSDM) is at the vanguard of advancing predoctoral education to prepare global leaders in oral health through interprofessional education (IPE). Established in 1868, TUSDM is world-renowned in dental education, research, patient care, and community service. The predoctoral curriculum underscores person-centered integrated care, teamwork, and collaboration. The contemporary curriculum incorporates emerging practice models and technologies to improve oral health across the lifespan. Notably, the [Department of Comprehensive Care](#) supports a dedicated IPE division to advance interprofessional collaborative practice and improve health outcomes, particularly for vulnerable, underserved patients, families, and communities. This paper highlights IPE programs focused on medical, social, and behavioral complexities of care.

## Interprofessional Education (IPE) Rotation

The IPE rotation is a 3.5-hour, in-person workshop offered 12 times annually. It brings together third-year dental students, pharmacy students, and diet and nutrition students. In recent years, efforts have expanded to include participants from additional professions, such as social work, occupational therapy, and physician associate programs. Historically, this rotation has centered on collaborative strategies for managing nicotine addiction. However, in 2023, the focus shifted to interprofessional approaches to addressing social determinants of health (SDoH) in clinical practice.

The rotation consists of three primary components: 1) pre- and post-rotation assessments, 2) collaborative breakout sessions, and 3) case-based role-plays. These elements were codeveloped by faculty from dentistry, social work, pharmacy, nursing, and diet and nutrition to foster meaningful interprofessional learning experiences.

Prior to the rotation, students complete a pre-assessment that includes:

- The Interprofessional Socialization and Valuing Scale (ISVS-9A)<sup>1</sup>
- Knowledge acquisition questions focused on SDoH<sup>2</sup>

Following the session, students complete a post-assessment featuring the same items from the pre-assessment. These assessments evaluate and compare students' SDoH knowledge acquisition and their beliefs, attitudes, and behaviors related to interprofessional collaboration across disciplines.

Additionally, student evaluations of the rotation are collected to gain qualitative insights. The evaluation include the following questions:

- What did you find most useful in the IPE rotation?
- What aspect of the IPE rotation was least enjoyable or valuable to your learning?
- What question(s) do you leave this rotation with?
- Describe your professional role within the health care team in addressing social determinants of health in clinical practice.

Overall, this rotation introduces students to competencies for interprofessional collaboration, addressing social determinants of health in clinical practice, and roles of different allied health professionals in delivering holistic patient- and family-centered care.

## Nutrition Education from an IPE Perspective

The dietetic intern clinical rotation brings eight dietetic interns from Frances Stern Nutrition Center at the Tufts School of Medicine to TUSDM for a three-week yearly rotation from September to May. The interns work with predoctoral dental students didactically and clinically. They collaborate clinically with third- and fourth-year students in the comprehensive care, pediatric, oral medicine, and medically compromised patient (MCP) clinics. They also participate in telehealth

competency and interprofessional education rotations. Interns attend the Basic Science/Clinical Science Spiral Seminar Series (BaSiCSsss) seminar, which is a case-based seminar presented by all fourth-year dental students. On Tuesday and Thursday afternoons, they join the geriatric rotation and IPE rotation. On Wednesday mornings of each week, they spend time in the Pediatric Community Service-Learning (CSL) rotation at one of the public schools in Boston. At the end of their rotation, the interns must complete assignments focused on the anatomy of the mouth, oral health, and the various intraprofessional specializations of dentistry. They also work on a project, complete a patient dietary history, create a presentation for the Pediatric CSL rotation, take a three-question quiz on an assigned reading in the Medically Complex Patient (MCP) clinic, and complete a reflection. This immersive experience allows dietetic and dental students to learn from each other, develop a deeper understanding of their respective roles, and identify opportunities to coordinate nutritional and oral health care.

This program benefits students by exposing them to interprofessional practice early in their training, improving their communication and teamwork skills, and fostering appreciation for the value that different health care providers bring to patient care.

## Geriatric Rotation

The geriatric rotation at TUSDM is an IPE program consisting of two half-days, designed to provide third-year dental students with a realistic understanding of how aging and disability affect patients in a dental setting. Through a combination of didactic, experiential, and case-based learning, the rotation fosters essential skills in empathy, effective communication, and person-centered care. The program leverages the expertise of professionals in dietetics, social work, occupational therapy, and pharmacy to create a dynamic, multidisciplinary learning environment.

On the first day, students participate in a simulation by wearing aging suits that replicate the physical, sensory, and cognitive challenges commonly experienced by older adults. These simulations expose students to common daily obstacles, such as limited mobility, visual and auditory impairments, and reduced dexterity. By navigating these challenges, students gain a firsthand understanding of the barriers their patients face and cultivate empathy that will inform their future clinical practice. Following the simulation, students complete asynchronous learning modules to deepen their understanding of geriatric care, age-related conditions, and person-centered approaches. This self-paced component equips students with foundational knowledge and prepares them for the next

day's case-based discussion. On the second day, students apply the insights gained from the simulation to analyze and develop a care plan for a geriatric patient with complex medical and social needs. The case-based discussion is guided by the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) framework, which encourages students to evaluate patient needs holistically by considering both clinical factors and SDoH. Students collaborate with professionals from other disciplines to create coordinated, practical care strategies tailored to the patient's unique circumstances. This collaborative process emphasizes the importance of interdisciplinary teamwork and demonstrates the value of integrating diverse perspectives into patient care. The session concludes with a structured treatment planning exercise where students consolidate their learning by articulating how they will integrate these insights into their clinical practice. This final activity ensures that the rotation's lessons are not only theoretical but also actionable, with real-world application.

The IPE activities are assessed using a mixed-method approach that includes Likert-scale and open-ended pre- and post-survey questions to evaluate changes in students' knowledge, attitudes, and confidence. Participant feedback has consistently demonstrated significant growth in students' empathy, confidence, and appreciation for interdisciplinary collaboration. One notable success of the program has been its ability to bridge the divide between theoretical instruction and practical application, equipping students with the skills necessary to adapt their dental care approaches to meet the nuanced needs of older adults and individuals with disabilities. By fostering interdisciplinary collaboration and person-centered care, the geriatric rotation ensures that future dentists are well-prepared to meet the challenges of providing inclusive and compassionate care in an evolving health care landscape.

## The Pediatric Community Service-Learning (CSL) Rotation

The Pediatric CSL rotation at TUSDM consists of three half-day sessions to equip third-year dental students to provide comprehensive oral health care to children ages 3–12, including those with special health care needs, within an interprofessional school-based dental clinic. Through preparatory modules, assignments, and hands-on clinical sessions, the dental students develop a solid grounding in community service-learning principles and gain valuable skills in pediatric care through collaboration with professionals from various health care disciplines. This interprofessional approach enhances the dental students' capacity to deliver holistic, person-centered care tailored to the needs of diverse communities.



Medical students from Tufts University School of Medicine (TUSM) join the dental students at the Pediatric CSL rotation for two half-day sessions as part of their pediatric clerkship. To prepare for this interprofessional experience, medical students complete a pre-survey and engage in the [Smiles for Life](#) training module on Child Oral Health. During the rotation, medical and dental students work together to conduct oral health assessments, provide oral health education, and deliver preventive dental services to school-aged children, including those with special needs. Emphasizing the value of interprofessional collaboration, students learn the importance of making referrals across disciplines and apply this practice when appropriate. A post-survey evaluates the program's impact on interprofessional collaboration and assesses changes in medical students' pediatric oral health knowledge. This collaborative experience strengthens each student's clinical skills and reinforces the importance of integrated, team-based care in promoting children's overall health.

Dietetic interns from Tufts also participate in the Pediatric CSL rotation, enriching the interprofessional learning environment. Before their session, the dietetic interns complete preparatory work on pediatric oral health and develop a presentation on an American Academy of Pediatric Dentistry (AAPD) policy, such as *Dietary Recommendations for Infants, Children, and Adolescents or Snacks and Beverages Sold in Schools*. During the session, the dietetic interns deliver their presentation to the interprofessional team and collaborate with dental students to review children's diet histories and provide tailored nutritional counseling. These efforts contribute to comprehensive, integrated care plans. Post-rotation surveys capture the dietetic interns' perspectives on the program's value and its impact on their professional development.

The Pediatric CSL rotation also creates a dynamic collaborative environment with school-based professionals, including school nurses and physical, occupational, Applied Behavior Analysis (ABA), and speech therapists. School nurses often collaborate with TUSDM faculty and students to address dental emergencies, such as tooth pain or orofacial injuries sustained during school activities. Occupational and ABA therapists play a vital role in supporting children with special needs, including those with autism spectrum disorder, by addressing behavior challenges, promoting the acceptance of dental treatment, and developing essential oral health skills. The physical therapist may recommend adaptive tools, like specialized toothbrushes or stabilizing supports, to accommodate a child's physical needs. Additionally, speech therapists may seek orthodontic consultations when anatomical issues affect speech development. These ongoing, reciprocal collaborations

contribute to a holistic, team-based approach to each child's health and well-being, providing students with a real-world model of effective interprofessional care.

## Challenges to IPE

While TUSDM has successfully implemented IPE activities, several challenges persist. Key obstacles to interprofessional collaboration include scheduling conflicts, the need for faculty supervision, varying curricular demands across health profession programs, the resource-intensive nature of immersive simulations, and discrepancies in the number of students across disciplines. For example, TUSDM enrolls up to 240 students per class, making it difficult for collaborators from smaller health programs to align schedules and fully participate in all IPE activities.

Currently, these activities are coordinated and maintained primarily at the dental school level, requiring the dental school faculty to build relationships, manage schedules, and develop meaningful opportunities across professions. This siloed approach presents limitations in fostering and sustaining collaboration across health professions.

We recommend coordinating IPE activities at a campus-wide health professional level to address these barriers. This broader coordination would facilitate greater alignment across programs and ensure equitable participation. Additionally, having dedicated staff tasked with organizing and supporting IPE activities would enhance efficiency, reduce the burden on individual faculty members, and enhance the overall impact of interprofessional activities.

## Tufts University School of Dental Medicine Use Case References

1. Gillian King, Carole Orchard, Hossein Khalili, and Lisa Avery, "Refinement of the Interprofessional Socialization and Valuing Scale (ISVS-21) and Development of 9-Item Equivalent Versions," *Journal of Continuing Education in the Health Professions* 36 no.3 (Summer 2016):171-177, <https://doi.org/10.1097/ceh.0000000000000082>.
2. Junko Mizumoto, Daisuke Son, Masashi Izumiya, Shoko Horita, and Masato Eto, "Experience of Residents Learning about Social Determinants of Health and an Assessment Tool: Mixed-Methods Research," *Journal of General Family Medicine* 23, no. 5 (September 2022):319-326, <https://doi.org/10.1002/jgf2.559>.

# University of California, San Francisco School of Dentistry

Lauren Gritzer, DDS, MPH

## Introduction

The Interprofessional Education (IPE) program at the University of California, San Francisco (UCSF) is a key component of the health professions curriculum, emphasizing collaborative, team-based care to improve patient experiences. UCSF's IPE program involves students from medicine, dentistry, nursing, pharmacy, and physical therapy who engage in structured interprofessional learning sessions throughout the curriculum. UCSF's IPE program aims to foster collaboration across health care professions, enhance mutual understanding of roles, and improve communication skills, thereby preparing students for integrated, patient-centered care that addresses health disparities and promotes better health outcomes.

The program is built upon the Interprofessional Collaboration Developmental Framework, which outlines students' progression from exposure to proficiency, covering developmental stages such as Introduction, Immersion, Development, Competence, and Continuous Professional Development.<sup>1</sup> IPE activities at UCSF align with the Interprofessional Education Collaborative (IPEC) competency domains: Roles and Responsibilities, Teams and Teamwork, Interprofessional Communication, and Values and Ethics.<sup>2</sup> These competencies guide the students' journey toward proficiency in interprofessional collaborative practice, preparing them for entry-level practice and beyond.

## Objectives

The IPE program emphasizes the [Core Principles of Interprofessional Practice](#), ensuring that students gain competencies in teamwork, communication, conflict management, and shared leadership. The program aligns with the IPEC objectives:

1. **Roles and Responsibilities:** Equip students with a clear understanding of their professional roles and the roles of others, enabling them to assess and meet the health needs of patients and communities.
2. **Teams and Teamwork:** Foster a collaborative environment where mutual respect, trust, and shared accountability are foundational, focusing on ethical, equitable, and effective care.

3. **Interprofessional Communication:** Develop effective communication skills to enhance team function, improve health outcomes, and reduce errors by clarifying roles and responsibilities and actively listening.
4. **Values and Ethics:** Instill a culture of respect for diverse professional cultures, values, and perspectives, encouraging ethical collaboration.

## Approach

The goals of UCSF's IPE program are focused on creating innovative, interprofessional health education and responding to community needs.

Key goals include:

- Developing interprofessional health education curricula, programs, and collaborative clinical practice sites
- Establishing a research, scholarship, and training agenda for interprofessional practice that meets the specific needs of the community

By the end of the training, each UCSF student will have participated in interprofessional experiences that foster an appreciation for diverse perspectives, enhancing their ability to contribute effectively to patient care, public service, and research.

## Framework and Competencies

UCSF's IPE Framework guides the institution's interprofessional activities and is structured around three core competency areas:

1. **Differential Competencies:** Each UCSF school maintains a set of competencies specific to its discipline, known as "differential competencies."
2. **Common Competencies:** Across UCSF's five schools, shared competencies are taught in both mono- and interprofessional settings to enhance teamwork and improve patient outcomes.
3. **IPE Competencies:** IPE competencies include essential collaborative skills, such as role division, innovative problem-solving, monitoring, and error prevention. These

competencies are applied in interprofessional settings, engaging students, faculty, and professional practitioners alike. The six general competency areas are:

- Understanding teams
- Continuous learning
- Conflict management
- Crisis and routine communication
- Effective delegation and follow-up
- Knowledge of roles and responsibilities

Expanding upon these six general areas, UCSF has established a specific set of IPE competency statements universal across all schools. By graduation, UCSF students will be able to:

- Use knowledge of their own role and the roles of other health professionals to appropriately assess and address the health needs of the patients and populations served
- Communicate with other health professionals in a manner that supports a collaborative approach to health maintenance and disease treatment in individual patients and populations
- Work collaboratively with other health professionals to uphold a climate of mutual respect, diversity, ethical integrity, and trust

## Program Development

Since its establishment in 2003, the UCSF IPE program has evolved to include three structured levels (*please see appendix for further detail about sessions*):

**Level 1:** Early exposure and experience with other health care profession students in small groups in the classroom setting (first- and second-year students).

**Sessions 1–3:** Introductory classroom-based sessions, focusing on fundamental interprofessional concepts (first-year students).

- **Session 1:** The Value of Interprofessional Practice
- **Session 2:** Roles, Responsibilities, and Abilities of Different Professions
- **Session 3:** How Will Our Work Get Done? Communication, Accountability, and Task Distribution

**Sessions 4–5:** Application of collaborative skills in simulated patient encounters with structured feedback from faculty and peers (second-year students).

- **Session 4:** Developing your Conflict Competency
- **Session 5:** Leadership and Membership in Team-Based Health Care

**Level 2:** Interprofessional standardized patient exercise, building on foundational interprofessional skills through a standardized patient simulation (second-year students).

Students are expected to apply their interprofessional collaboration skills in a clinical scenario while working with an interprofessional team of colleagues.

This exercise is designed to provide students with:

- An opportunity to work with an interprofessional team to care for a patient
- A deeper understanding of the roles and responsibilities of other health care professionals in the care of patients with chronic illnesses
- Experience in developing an interprofessional team care plan based on shared decision-making
- Structured feedback from a standardized patient and faculty facilitators on students' communication, collaboration, and teamwork skills

**Level 3 (Advanced IPE Pathway):** Clinical and elective experiences where students engage in real-world interprofessional practice (third- and fourth-year students).

Interested students can sign up for this program as part of their elective coursework, choosing activities that align with their career interests and professional goals. The advanced enrichment sessions offer students the opportunity to apply and expand their interprofessional competencies in more complex, hands-on scenarios. Designed for students who have completed the foundational IPE curriculum (Level 1), these sessions are ideal for those seeking to deepen their skills in interprofessional collaboration and contribute to initiatives that advance team-based health care practice. The annual clinical simulation (Level 2) serves as a critical step in preparing students for real-world interprofessional practice and reinforcing principles of team-based care, effective communication, and patient-centered collaboration. The optional enrichment program (Level 3) provides a progressive learning path where students advance from exposure to immersion, competency, and proficiency in interprofessional collaboration. Completing these sessions enhances students' preparedness for collaborative, patient-centered care in diverse health care settings and provides a foundation for lifelong interprofessional development.

## Assessment Structure and Tools

UCSF's IPE program includes a comprehensive assessment structure to track students' progress across the IPEC competency domains:<sup>3-7</sup>

1. **Baseline Assessment:** Reflective writing assignments provide insight into students' initial perceptions and understanding of interprofessional collaboration.
2. **Formative Assessment:** Tools like the Teamwork VALUE Rubric and the Individual Teamwork Observation and Feedback Tool offer ongoing feedback, helping students refine their collaboration skills.
3. **Summative Assessment:** Final evaluations using the IP Collaborative Competency Attainment Survey and the IP Collaborator Assessment Rubric measure students' readiness for collaborative practice.

Assessment tools allow UCSF to measure students' abilities to integrate interprofessional competencies into their practice, supporting continuous learning and adaptation.

## Lessons Learned and Recommendations

UCSF's IPE program highlights the importance of continuous adaptation and collaboration across schools. To be successful in creating and implementing an effective IPE program, it is important to align IPE activities with each school's curriculum. This alignment requires coordination with deans and faculty, as well as a clear understanding of each profession's accreditation standards. Regular meetings with faculty and student representatives have proven essential for adapting the curriculum to meet students' developmental needs and for faculty and student buy-in. Promoting psychological safety and addressing challenges related to hierarchy and power dynamics are essential for creating a learning environment where all voices are respected and valued.

## Conclusion

UCSF's IPE program exemplifies a robust approach to collaborative health professions training. Through carefully structured sessions focused on core competencies and developmental progression, UCSF prepares students to enter their fields with the skills necessary to provide high-quality, patient-centered care in interprofessional settings. By embracing shared leadership, effective communication, and ethical integrity, UCSF's IPE program fosters a culture of respect and collaboration that enhances both patient and community health outcomes.

## University of California, San Francisco School of Dentistry Use Case References

1. Ciraj Ali Mohammed, R. Anand, and V. Saleena Ummer, "Interprofessional Education (IPE): A Framework for Introducing Teamwork and Collaboration in Health Professions Curriculum," *Medical Journal Armed Forces India* 77, suppl. 1 (February 2021): S16–S21, <https://doi.org/10.1016/j.mjafi.2021.01.012>.
2. Interprofessional Education Collaborative Expert Panel, *Core Competencies for Interprofessional Collaborative Practice: Report of an Expert Panel*, Washington, DC: Interprofessional Education Collaborative, 2011.
3. ICCAS: *Interprofessional Collaborative Competency Attainment Survey*, [https://steps.wvu.edu/media/15163/iccas\\_survey.pdf](https://steps.wvu.edu/media/15163/iccas_survey.pdf).
4. Association of American Colleges and Universities, *VALUE Rubrics — Teamwork*, <https://www.aacu.org/initiatives/value-initiative/value-rubrics/value-rubrics-teamwork>.
5. National Center for Interprofessional Practice and Education, *Interprofessional Collaborator Assessment Rubric (ICAR), 2014*, <https://nexusipe.org/informing/resource-center/interprofessional-collaborator-assessment-rubric-icar>.
6. Jill Thistlethwaite, Kathy Dallest, Monica Moran, Roger Dunston, Chris Roberts, Diann Eley, Fiona Bogossian, Dawn Forman, Lesley Bainbridge, Donna Drynan, and Sue Fyfe, "Introducing the Individual Teamwork Observation and Feedback Tool (iTOFT): Development and Description of a New Interprofessional Teamwork Measure," *Journal of Interprofessional Care* 30 no. 4 (June 2016): 526–28, <https://doi.org/10.3109/13561820.2016.1169262>.
7. Oregon State University Center for Teaching and Learning, *Reflective Writing Rubric*, [https://ctl.oregonstate.edu/sites/ctl.oregonstate.edu/files/reflective\\_writing\\_rubric.pdf](https://ctl.oregonstate.edu/sites/ctl.oregonstate.edu/files/reflective_writing_rubric.pdf).

# Appendix: University of California, San Francisco School of Dentistry IPE Session Details

## Level 1: Sessions 1–5

### Session 1: What Is It All About? Introducing Core Interprofessional Concepts

**Objective:** To introduce students to the foundational concepts of IPE and interprofessional collaborative practice (ICP). This session sets the stage for students to begin working together by understanding why interprofessional collaboration is crucial for effective patient care.

#### Session Activities:

- **Define Interprofessional Education and Practice:** Students discuss what IPE and ICP mean within the health care setting, focusing on collaboration as a tool for improving patient care outcomes.
- **Discuss Benefits of High-Functioning Teams:** Through a mix of small and large group discussions, students explore the value of interprofessional teams in addressing health care needs, improving patient satisfaction, and achieving the Quintuple Aim (improving patient outcomes, enhancing patient experience, lowering costs, supporting clinician well-being, and advancing health equity).
- **Address Health Care Disparities:** Using the Institute of Medicine’s model, students brainstorm ways in which collaborative practice can reduce health care disparities. For example, they may consider how integrated care could improve access for underserved populations.

**Assessment:** After the session, students complete a reflection on their understanding of IPE and the potential for interprofessional teams to address health care disparities. Faculty facilitators also provide feedback based on student engagement and participation.

### Session 2: Who Is on My Team? Understanding Roles, Responsibilities, and Abilities of Different Professions

**Objective:** To deepen students’ understanding of the various health care professions’ roles, training, and scopes of practice, emphasizing how each discipline contributes to collaborative care.

#### Session Activities:

- **Role Identification and Responsibilities:** Each profession presents its roles and typical responsibilities in health care settings, allowing students to learn how different fields contribute to patient care.
- **Simulated Patient Encounter:** Students participate in a collaborative exercise where they take on different professional roles in a simulated patient interview. They work together to gather information, develop a problem list, and create recommendations for the patient’s caregiver.
- **Problem-Solving in Teams:** After the interview, students reconvene to discuss their experiences, with a focus on what each discipline brought to the table and how they can coordinate their efforts to improve patient outcomes.

**Assessment:** Students are evaluated on their ability to explain their own profession’s role, understand other roles, and work effectively in a team. Reflection on the experience and peer feedback also provide insights into individual strengths and areas for improvement.

### Session 3: How Will Our Work Get Done? Communication, Accountability, and Task Distribution

**Objective:** To equip students with essential communication skills for interprofessional teamwork, including strategies for accountability and effective task distribution.

#### Session Activities:

- **Jargon Awareness:** Students identify jargon commonly used in their own professions and discuss how it can hinder interprofessional communication. They explore ways to reduce jargon to enhance clarity across disciplines.
- **Communication Tools and Strategies:** Through case studies, students practice using structured communication tools such as SBAR (Situation, Background, Assessment, Recommendation) and Team Strategies and Tools to Enhance Performance and Patient Safety ([TeamSTEPPS](#)) to improve the clarity and efficiency of their communication.
- **Role Distribution Exercise:** Students divide tasks and roles within a hypothetical patient care scenario, allowing them to practice delegating responsibilities based on each profession’s expertise and scope of practice.

**Assessment:** Students complete a self-assessment on their communication skills and receive feedback from facilitators and peers on their ability to communicate clearly and distribute tasks effectively. Reflection on task management and accountability in a team setting is also required.

## Session 4: How to Tackle Challenges — Conflict Management and Negotiation

**Objective:** To teach students how to manage conflicts within health care teams and practice negotiation techniques, which are essential for resolving differences and maintaining effective collaboration.

### Session Activities:

- **Identify Sources of Conflict:** Students explore common sources of conflict in interprofessional health care settings, such as overlapping responsibilities, different communication styles, and high-stress environments.
- **Conflict Management Styles Assessment:** Students complete a conflict management style assessment to understand their default approach to handling disagreements. They learn about different conflict styles, including competing, accommodating, avoiding, compromising, and collaborating.
- **Three-Step Conflict Management Practice:** Using role-playing exercises, students practice a three-step framework for conflict resolution: (1) cooling down, (2) slowing down to understand positions and interests, and (3) engaging constructively. Scenarios are designed to reflect real-life health care challenges, such as resource limitations or differing treatment opinions.

**Assessment:** Feedback from facilitators focuses on students' ability to use constructive language and negotiation skills. Peer feedback and self-reflection on conflict management styles and personal growth in handling difficult interactions are also integral to assessment.

## Session 5: How Can We Work Together? Leadership and Membership in Team-Based Health Care

**Objective:** To enhance students' understanding of leadership and membership roles in team-based care, with a focus on psychological safety, shared leadership, and team dynamics.

### Session Activities:

- **Leadership Compass Styles:** Students complete a Leadership Compass assessment to identify their personal leadership style (e.g., North, South, East, West) and discuss how their style influences their interactions

in team settings. They explore the strengths and challenges of each style.

- **Promoting Psychological Safety:** Students discuss strategies for creating a psychologically safe team environment, where members feel comfortable sharing ideas and raising concerns without fear of negative consequences.
- **Shared Leadership in Case Discussion:** In small groups, students work through a patient case that requires input from multiple professions. They practice shared leadership by rotating roles and making joint decisions, applying both leadership and followership skills.

**Assessment:** Students are assessed based on their participation, understanding of shared leadership principles, and ability to foster a supportive and respectful team environment. Facilitators provide targeted feedback, and students reflect on their development as collaborative team members.

## Level 2: Interprofessional Standardized Patient Exercise

Teams of four learners from different health professions work as an interprofessional team to evaluate a standardized patient with several complex chronic issues. The team reviews case information and strategizes the patient encounter, then individual members assess the patient while their team observes. After all members have interviewed the standardized patient, the team prepares a care plan which is then shared with the patient. At the end of the experience, a faculty-facilitated debrief session involves a discussion of the interprofessional communication and collaboration that occurred during the exercise.

### Assessment:

Students participating in Level 2 engage in multiple forms of assessment to evaluate their interprofessional collaboration skills and ability to apply team-based care principles in a clinical setting. The assessment includes:

- Self-assessment, where students reflect on their own performance, communication, and contributions to the interprofessional team
- Peer assessment, allowing students to provide structured feedback to their colleagues on teamwork, collaboration, and communication
- Standardized patient assessment, in which the simulated patient provides feedback on the student team's ability to communicate effectively, demonstrate empathy, and address patient concerns

- Faculty observation, where faculty facilitators assess student engagement, problem-solving, and adherence to interprofessional best practices.

These assessment methods ensure a comprehensive evaluation of students' interprofessional competencies that fosters continuous learning and improvement in collaborative health care practice.

### Level 3: (Advanced IPE Pathway): Optional Enrichment Sessions for Advanced Students

Interested students can sign up for these sessions as part of their elective coursework, choosing activities that align with their career interests and professional goals. The sessions are ideal for those seeking to deepen their skills in interprofessional collaboration and contribute to initiatives that advance team-based health care practice. This optional enrichment program provides a progressive learning path where students advance from exposure to immersion, competency, and proficiency in interprofessional collaboration. Completing these sessions enhances students' preparedness for collaborative, patient-centered care in diverse health care settings and provides a foundation for lifelong interprofessional development.

**Objective:** The advanced enrichment sessions offer students the opportunity to apply and expand their interprofessional competencies in more complex, hands-on scenarios. Designed for students who have completed the foundational IPE curriculum (Sessions 1–5), these sessions provide further immersion into collaborative practice and prepare participants for entry-level interprofessional practice and continuous professional development.

#### Activities

1. **Interprofessional Exposure Activities (Foundational Experience):** Students engage in various real-world interprofessional activities, such as observing Graduate Medical Education Grand Rounds, participating in health fairs or free clinics, and attending interprofessional seminars. This level emphasizes observational learning and introductory collaboration, giving students a chance to see team-based health care in action and reflect on interprofessional roles and responsibilities.
2. **Immersive Clinical Rotation:** In the 2–4-week clinical experience, students join interdisciplinary teams in a clinical setting, working collaboratively to provide patient-centered care. They participate in case discussions, clarify roles, and make collective decisions as they encounter real patients and real-world health care

dynamics. Faculty preceptors provide mentorship, guiding students in developing team communication, role clarity, and collaborative problem-solving skills.

3. **Standardized Patient Exercise:** Students participate in simulated patient scenarios, working with peers from different professions to address complex patient needs. Each student brings their unique disciplinary perspective to the case, requiring cohesive team-based decision-making under time constraints. Following the scenario, students participate in a structured debrief where they discuss their teamwork, communication, and adaptability, as well as feedback from faculty facilitators and standardized patients.
4. **Interprofessional Project/Scholarly Work:** This session provides an opportunity to contribute to a project or scholarly work under the guidance of a faculty mentor. Students can participate in initiatives like interprofessional quality improvement projects or join UCSF's Program for Interprofessional Practice and Education (PIPE) Committee. This capstone-like experience allows students to apply their interprofessional knowledge to broader health care challenges, fostering skills in project management, research, and leadership.

#### Assessment

Each session includes structured assessments aligned with the Interprofessional Collaboration Developmental Framework and IPEC competency domains. Assessment methods include:

- Reflective writing on exposure-level activities and immersive experiences
- Direct observation and feedback from faculty and peers during immersive rotations and standardized patient exercises
- Project evaluation for interprofessional research or quality improvement (QI) projects, based on contribution to scholarship, relevance to health care, and collaborative process

#### Faculty Roles and Support

Faculty play key roles as mentors, facilitators, course sponsors, and project advisors, ensuring that students receive guidance and constructive feedback. Through these sessions, faculty foster a supportive learning environment where students can practice and refine their interprofessional skills.

# University of Colorado Denver Anschutz Medical Campus

*Raquel Baroni de Carvalho, PhD, MSc, BDS*

## **The University of Colorado (CU) Anschutz Medical Campus IPE Experience**

**IPE Program Goal:** To improve population health, quality of care, and reduce health care costs through the creation of a patient-centered, collaborative, practice-ready workforce with competencies in quality and safety, values and ethics, and teamwork and collaboration in the context of systems and systems-based practice.

**Our Longitudinal Goal:** IPE curriculum is being integrated into preclinical and clinical training for all University of Colorado health professions students and will establish, teach, and evaluate campus-wide student competencies in teamwork, collaborative interprofessional practice, and quality and safety, with a particular focus on vulnerable and underserved populations.

- The IPE Program develops, administers, and evaluates the longitudinal interprofessional education curriculum for all health professions students on the CU Anschutz Medical Campus.
- The curriculum brings students together to learn and practice skills during their preclinical and clinical training with two different courses: **Interprofessional Collaborative Practice** and **Interprofessional Healthcare Ethics and Health Equity**.
- The IPE Program consists of three components: classroom team-based learning, simulation experiences at the Center for Assessing Professional Excellence (CAPE), and practicum experiences at clinical sites.
- CU Anschutz Medical Campus graduates will be competent to participate as members of a collaborative interprofessional workforce.
- The dental students have a dental-only IPE session at the end of the fall semester with students from the Dental Hygiene and Dental Assistant programs.

**Courses:** The **Interprofessional Collaborative Practice** course is a one-semester course required of health professions students on the Anschutz Medical Campus. There may also be students participating from the School of Public Health. The course takes place over seven sessions in the spring

of Year 1 and develops core competencies in teamwork and collaboration for first-year health professions students. Students learn in interprofessional teams coached by interprofessional faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve interprofessional collaboration. Sessions are two hours in length and involve active learning in teams using a team-paced learning method to engage learners in **Teamwork and Collaboration competency domains with four overarching goals:**

- Describe the process of team development and the roles and practices of effective teams
- Demonstrate communication skills and processes within teams
- Recognize components of and perform effectively on sequential and simultaneous interprofessional collaborative teams
- Provide feedback on individual and team performance to improve effectiveness of interprofessional teamwork

**Interprofessional Healthcare Ethics and Health Equity** is a one-semester course required of health professions students on the CU Anschutz Medical Campus. There may also be students participating from the School of Public Health. The course takes place over seven sessions in the fall of Year 2. This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. This course integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and its historical origins, and approaches to health care decision-making. Sessions are two hours in length and involve active learning in teams using a team-paced learning method to engage learners in Value and Ethics competency domains with three overarching goals:

- **Awareness:** Recognize when you are facing an ethical issue.
- **Analysis:** Study the ethical issue to arrive at a decision about the right thing to do.
- **Action:** Develop and practice executing your plan for how to do what is right.



The CU Anschutz Medical Campus was intentionally designed to facilitate interprofessional education. Education buildings are shared among all health professions programs on campus, and students from different programs regularly interact both inside and outside the classrooms. At the heart of the educational effort is the Fulginiti Pavilion, which houses the Center for Bioethics and Humanities as well as the Center for Interprofessional Practice and Education Program.

Discover more about each program that participates in IPE on the CU Anschutz Medical Campus: Dental Medicine, Medicine, Nursing, Pharmacy, Physical Therapy, Physician Assistant, and Public Health:

<https://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/center-interprofessional-education--practice/#text>

# University of Detroit Mercy School of Dentistry

*Melanie E. Mayberry, DDS, MS-HCM*

## Background and Introduction

The [University of Detroit Mercy School of Dentistry \(UDMSOD\)](#), with its urban-centric mission, accepts 148 dental students for the Doctor of Dental Surgery program. UDMSOD is in the heart of Detroit and enthusiastically serves the people of metropolitan Detroit, the state of Michigan, and neighboring communities with excellence and compassionate care. We have state-of-the-art facilities on our Corktown campus, providing a full scope of comprehensive oral health care and dental treatment to patients of all ages and diverse demographic backgrounds.

The Interprofessional Education (IPE) and Collaborative Practice (CP) curriculum started in the fall of 2017, led by Dr. Melanie E. Mayberry, Division Director, Practice Essentials and Interprofessional Education. Since its inception, the goals of the deliberately designed longitudinal IPE-CP curriculum have been to create meaningful opportunities and experiential learning for the predoctoral dental students with other non-dental health professional students. The IPE-CP curriculum at the UDMSOD is unique. Unlike many other academic health centers, UDMSOD does not share a campus with non-dental health professional programs. While this presents logistical challenges, it also allows for creative, innovative strategic partnerships with other universities, academic health centers, and health professional programs.

## Preclinical First-Year Dental Students

The IPE-CP curriculum begins in the first semester of the D1 year of the predoctoral program. Students are introduced to the concept of interprofessional education and collaborative practice through a didactic delivery format. Content includes

the definition of IPE, why IPEC-CP is important, drivers of change for the implementation of IPE-CP, and the [core competencies as defined by the Interprofessional Education Collaborative](#).

## Preclinical Second-Year Dental Students

In the first semester of their second year, dental students participate in their first hands-on IPE experience with physician assistant students of the same program year from the University of Detroit Mercy College of Health Professions (UDMCHP). This reformatted and revised IPE experience started in 2018. The UDMCHP is located approximately six miles away on the university's main campus. Dental and physician assistant students are randomly assigned to a 6–8-member team. They are given a simulated case to work through collaboratively with guided discussion prompts, which include medical and dental prompts that emphasize the oral-systemic connection. The case is designed to engage both dental and physician assistant students in their second year, based on the expected basic knowledge of students at this level within their respective programs. For the first few years, the delivery format was in person on campus. During the early days of the pandemic, it was moved to a virtual format with an added objective of students becoming familiar with telehealth. All sessions are facilitated by health professional faculty calibrated to the sessions' goals and content; faculty include dentists, physicians, social workers, and physician assistants. Goals of the previous iterations focused on the IPEC competency domains: Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams and Teamwork. The student assessments used are the RIPLS ([Readiness for Interprofessional Learning Scale](#)), given both pre- and

post-session. Additionally, dental students are required to submit a short essay reflection on their IPE experience addressing specific questions. The facilitators used the ICAR (Interprofessional Collaborator Assessment Rubric) assessment to evaluate the function of the teams.

After a few iterations, the dental and PA faculty leads reviewed the program and decided to focus on a single IPEC competency. The goal was changed to focus on Roles/Responsibilities, to use the knowledge of one's own role and those of other professions to appropriately assess and address the health care needs of patients, and to promote and advance the health of populations. The objectives of this session are now to address the Roles and Responsibilities laid out in the IPEC core competencies (RR1–RR3, IPEC page 17) and to demonstrate best practices when using telehealth/teledentistry technology.

In the winter semester of the second year, dental students participate in two IPE experiences, one with medical students from Oakland University William Beaumont School of Medicine (OUWBSOM) and the second with social work, medical, occupational therapy, athletic training, nursing, and pharmacy students from Wayne State University School of Medicine (WSUSOM), located in Detroit. OUWBSOM is located approximately 25 miles north of Detroit.

This IPE session, which has been offered since 2019, includes standardized patient actors (SPAs) and case-based learning. Dental and medical students are randomly paired and assigned to a team. Initially, students were required to work through three scenarios with SPAs addressing all of the IPEC competencies: Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams and Teamwork. After a few iterations, the faculty leads for dental and medical decided to reformat the program, use a collaborative online format, and focus on only one IPEC competency. The goal of the session is now Interprofessional Communication. The objectives of this session are to address the Communication skills laid out in the IPEC core competencies (C3–4, C6, IPEC page 18). Students from UDMSOD and OUWBSOM collaborate to identify possible causes of the chief complaint, potential treatments, interventions and/or solutions, and counsel the SPA on next steps. The student-led and student-centered sessions have assigned, calibrated faculty to answer questions. Students receive verbal feedback from the faculty and the SPA and complete an individual short reflection addressing specific questions.<sup>1</sup>

The UDMSOD second-year dental students participate in the WSUSOM Older Adult Interprofessional Education Team Home Visit Program, involving more than 600 students from diverse health professions programs, including the School of

Medicine and the Eugene Applebaum College of Pharmacy and Health Sciences, and students from the occupational therapy, physical therapy, athletic training, physician assistant, nursing, and social work programs. Student health professional teams are developed. On average, 160 interprofessional teams meet in an IPE session where students explore each other's roles and responsibilities in patient care and outcomes, demonstrate interprofessional communication, improve teamwork skills, and evaluate and discuss aspects of care and treatment for older adult and geriatric patients. Interprofessional teams then conduct collaborative online IPE telehealth visits with standardized older adult patients. The interprofessional teams collaboratively develop a patient care plan for the standardized older adult, identify health care disparities, and make recommendations.

All students complete the ISVS ([Interprofessional Socialization Valuing Scale](#)) pre- and post-assessment as well as a peer-to-peer assessment. Older adult patients complete a team assessment. Students receive feedback on the care plans they collaboratively developed. Dental students are required to complete a reflection addressing specific questions.<sup>3</sup>

## Clinical Dental Students

In the winter term of the clinical third year, dental students have a clinic-based interprofessional collaborative practice experience with senior-level pharmacy students of the Eugene Applebaum College of Pharmacy and Health Sciences at Wayne State University.

## Competency Assessment

An OSCE (Objective Structured Clinical Examination) is used to assess student competency in interprofessional communication.

## Student Feedback

Students are encouraged to provide feedback through anonymous end-of-course evaluations.

## Lessons Learned

The biggest challenges with implementation of IPE experiences are twofold. One is identifying mutually agreeable session dates and ensuring an adequate number of facilitators. Each health profession program has its unique academic calendar and program needs that must be met. This uniqueness can present scheduling challenges. Coordination, an innovative skill set, and persistence with a can-do spirit are essential for implementing any IPE program. Additionally, it is recommended to try not to address all IPEC competencies in a single session; instead, it is suggested to choose one IPEC competency to address in a session.

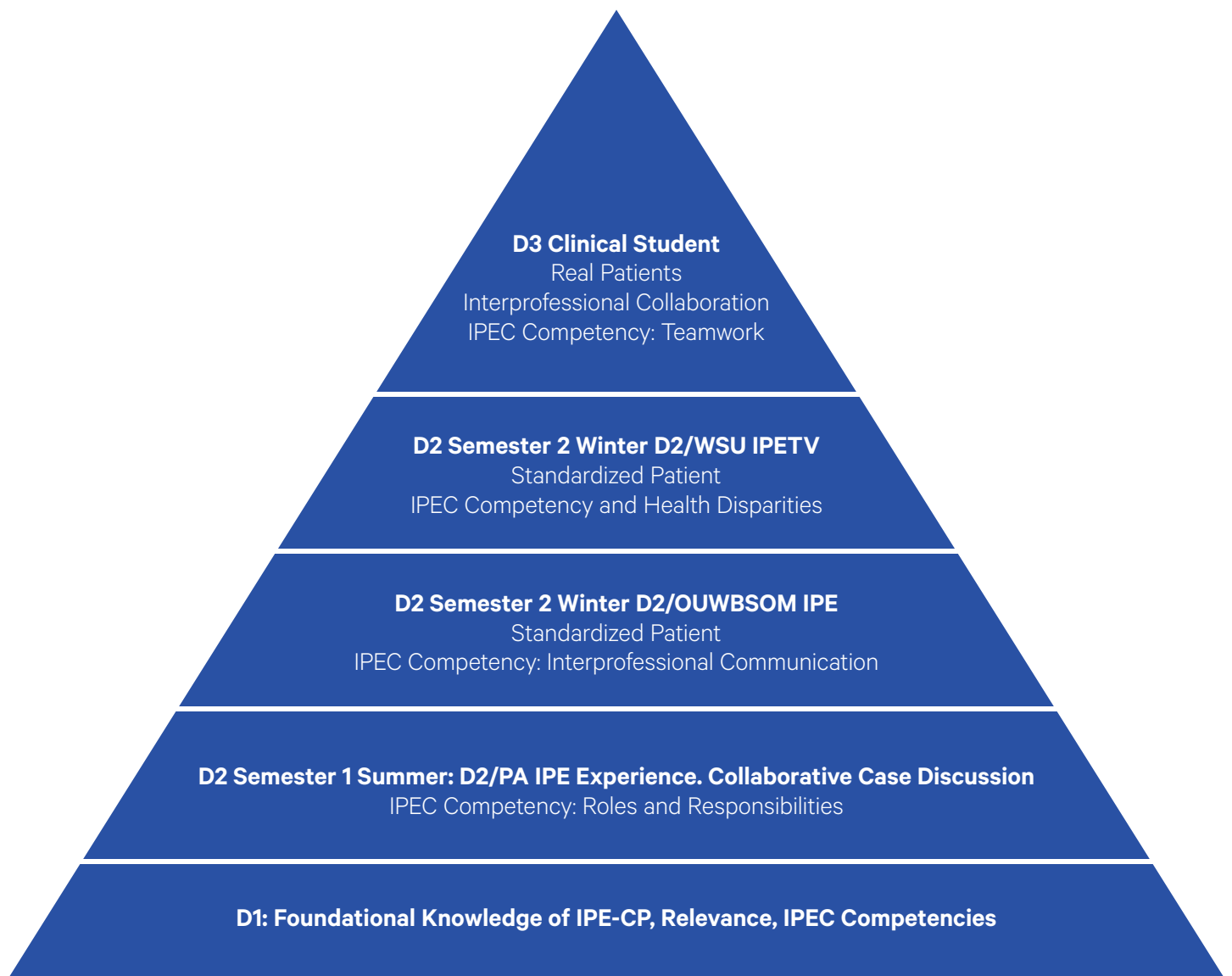
## Acknowledgments

Thank you to the leadership of the University of Detroit Mercy School of Dentistry and to our academic health care professions institution partners.

## University of Detroit Mercy School of Dentistry Use Case References

1. Melanie E. Mayberry, Sonal C. Patel, and Stephanie Marcincavage, "Designing Student-Centered Interprofessional Experiences with Dental and Medical Students," *Journal of Dental Education* 2024;88(Suppl. 3):1852–1854. <https://doi.org/10.1002/jdd.13382>
2. Brittany Stewart, Aline H. Saad, Francine D. Salinitri, and Melanie E. Mayberry, "Playing in the Sandbox Together: Incorporating Student Pharmacists into Dental Practice," *Journal of Dental Education* 2024;88(Suppl. 3):1855–1857. <https://doi.org/10.1002/jdd.13411>
3. Mayberry, Melanie E., Ashley Reed, Brittany Stewart, and Aline H. Saad, "Implementation of a Telehealth Interprofessional Team Visit with a Standardized Patient," *Journal of Dental Education* 2023;1–3. <https://doi.org/10.1002/jdd.13351>

**Figure A: University of Detroit Mercy School of Dentistry IPE Curriculum by Year**



# University of Florida College of Dentistry

*Olga Ensz, DMD, MPH*

## Introduction

The well-established link between oral and overall health underscores the need for an interdisciplinary approach to health care. For more than 25 years, IPE has been a cornerstone of the professional colleges at the University of Florida (UF) Academic Health Center. UF dental faculty members actively participate in the UF IPE Committee, creating opportunities for collaboration with health professional educators to develop and implement IPE activities. These initiatives enable students to appreciate the roles and responsibilities of various health professions and practice engaging in coordinated patient care and management.

## Objectives and Benefits

Dental students at the UF College of Dentistry participate in a formal interprofessional curriculum, interacting with other health professional students and providers throughout all four years of the predoctoral dental education (DMD) program. The goals of these IPE activities are to:

- Recognize the impact of social, economic, political, and cultural determinants on patient health
- Enhance student competency in interprofessional collaboration
- Advocate for person-centered approaches in health care
- Improve health outcomes for diverse patient populations

## Program Development

The UF Office of Interprofessional Education has developed and directed several IPE activities, including Putting Families First (PFF) and Interprofessional Learning in Healthcare (IPLH), detailed in the next section. Additionally, various IPE activities have emerged from organic collaborations between dental faculty and health professional educators at other UF Health Sciences Center colleges. These programs are guided by the Interprofessional Education Collaborative (IPEC) core competencies for interprofessional collaborative practice, which shape their objectives and implementation strategies. In response to the COVID-19 pandemic, many IPE activities have transitioned to virtual synchronous formats. Students also continue to engage in IPE experiences in preclinical settings and clinical rotations.

## Program Components

### Year 1

**Putting Families First** is an IPE activity coordinated by the UF Office of Interprofessional Education, involving first-year students and faculty members from all six Health Sciences Center colleges. Interprofessional teams of 4–5 students work with an assigned family or community member to learn about their health needs and collaborate to develop a personalized health promotion project by the conclusion of the program.

The structure of PFF includes six virtual synchronous meetings with UF faculty facilitators and student teams. Approximately three student teams are assigned to two interdisciplinary faculty facilitators, with three meetings occurring in the fall semester and three in the spring semester. These meetings cover topics such as interprofessional teamwork in health care, person-centered care, social determinants of health, health literacy, and access to care. Students also debrief on the home visits with their assigned community participant and receive guidance on their health promotion project.

During Year 1, students complete two home visits with community participants each semester, observing environmental factors that may affect the health needs of participants, and applying behavioral science approaches to person-centered care. The central theme of the PFF program is team-based learning about the impact of resources and environment on health status. Students apply the [TeamSTEPS](#) evidence-based tool kit to integrate communication and teamwork principles with their team members and engage in project-based learning to complete a health promotion project that aligns with the health goals of their assigned community participant.

Two additional IPE activities occur in Year 1. In Semester 1, dental students participate in the **Area Health Education Center Tobacco Training and Cessation Initial Training (ATTAC-IT) Afternoon of Learning**. This three-hour virtual synchronous session educates health professional students from dentistry, medicine, nursing, pharmacy, public health, physical therapy, and occupational therapy on the importance of addressing and treating tobacco dependency through collaborative approaches. Students learn about motivational interviewing and tobacco cessation resources to assist in patient care.

In Semester 2, dental students engage in a preclinical **Safe Moves Patient Transfer Lab** with physical therapy (PT) students. This activity, held in the dental student clinics over 1.5 hours, involves hands-on instruction on safe patient transfer in and out of the dental chair for patients who use ambulatory assistive devices. Dental students also teach PT students about adaptive oral hygiene aids that may benefit patients with limited upper extremity mobility. The teaching occurs in small interprofessional groups of 3–4 students per profession. Prior to the activity, students create handouts detailing the roles of dentistry or physical therapy in patient care, along with graphics and descriptions of proper body mechanics for safe patient transfer or adaptive oral hygiene devices.

### Year 2

IPE activities continue in Semester 3 with dental students participating in the **Interprofessional Learning in Healthcare (IPLH)** online learning experience organized by the UF Office of Interprofessional Education. As part of IPLH, dental students work in teams that include students from the UF College of Public Health and Health Professions to complete three modules focused on the HIV/AIDS care continuum within the context of patient safety and quality, social determinants of health, and community health education and prevention.

In Semester 4, dental students participate in an **Opioid Screening, Brief Intervention and Referral to Treatment (SBIRT) Training Seminar** led by the UF College of Public Health and Health Professions. This interprofessional education session involves students from dentistry, nursing, pharmacy, physical therapy, and veterinary medicine. During the seminar, dental students learn to identify the signs and symptoms of opioid use and abuse, recognize the scope of the opioid crisis, and collaborate with other health professional students to discuss interventions aimed at reducing stigma and supporting individuals at risk for substance use disorder.

In Semester 5, students participate in a new two-hour virtual synchronous IPE activity, developed in 2023 by faculty from dentistry and occupational therapy (OT). In this **DMD-OT IPE**, dental and OT students review case-based scenarios of patients across the lifespan with special health care needs. Students work in interprofessional groups to collaboratively develop educational artifacts and infographics that detail strategies to positively enhance the dental visit experience for patients with sensory sensitivities or chronic pain affecting activities of daily living. Additionally, students watch videos featuring “pearls of wisdom” from practicing dental and OT clinicians, as well as parents and caregivers of special needs patients, where they share guidance on improving access to dental care for vulnerable patient communities.

### Year 3

In Semesters 6, 7, and 8, third-year dental students complete three half-day rotations in the UF Health **Care One Clinic**. This interprofessional transitional primary care clinic serves adult patients who frequently visit the emergency department and face exceptional challenges in managing their complex health needs. Supervised by clinical dental faculty, dental students collaborate with a team of health professionals, including physicians, pharmacists, social workers, and other health professions students, to improve the overall health of these patients.

While in the Care One Clinic, dental students work with diverse patient populations, utilizing their communication skills and basic science knowledge to enhance patient health literacy. Dental students provide head and neck exams, oral cancer screening, oral health education, tobacco cessation education, and referral resources to assist in establishing routine dental care.

Following each rotation, students complete a written reflection analyzing the roles of the various health professions in patient care and the barriers experienced by this high-risk patient population. Beginning in spring 2024, a Care One Clinical Experience case-based exam was introduced to assess student competency in managing diverse patient populations and effectively communicating with other members of the health care team to facilitate the provision of care.

In Semester 8, dental and second-year pharmacy students participate in a two-hour synchronous virtual **DMD-Pharmacy IPE** where they work together in interprofessional groups to assess a medically complex standardized patient case. Students collaborate to develop a care plan, with dental students writing necessary prescriptions and pharmacy students providing feedback. Additionally, dental students complete a medical referral letter to demonstrate their competency in interprofessional communication.

### Year 4

In their final semester, dental students collaborate with third-year pharmacy students in a two-hour online synchronous case-based activity focused on prescribing non-opioid alternatives for pain management. This case involves role-playing professional communication using prescription drug monitoring program data to make clinical decisions about prescribing and dispensing opioids.

## Lessons Learned

One of the greatest lessons learned was the advantages of virtual synchronous IPE activities in terms of coordination and scheduling, especially when involving multiple health

professional students. The flexibility of virtual sessions made it easier to accommodate diverse schedules and ensure full participation. Support from instructional designers was crucial in building and designing online modules, as well as ensuring that these activities ran smoothly and effectively.

When planning IPE activities or assignments, it is essential to ensure equitable contributions from all participating health professions student cohorts. This approach helps students feel valued, represented, and engaged, fostering a more inclusive and collaborative learning environment.

The monthly meetings organized by the UF IPE Committee provided routine opportunities for collaboration and discussion of available resources, which were instrumental in guiding

the development of newer IPE activities. These meetings facilitated the sharing of best practices, addressing challenges, and continuously improving the quality and impact of interprofessional education.

## Conclusion

Through these comprehensive interprofessional education activities, the UF College of Dentistry ensures that its students are well prepared to collaborate effectively with other health professionals. This approach fosters a culture of teamwork and mutual respect, enhances students' educational experience, and equips them with the skills necessary to improve patient outcomes and address complex health challenges.

# University of Illinois Chicago College of Dentistry

*Sobia Bilal, BDS, MSc, PhD*

Building effective programs in Interprofessional Practice and Education (IPE) continues to be one of the significant goals at University of Illinois Chicago (UIC) in recognition of the potential for profound impact on education and health care delivery in Illinois. IPE has reached a new level at UIC with the approval of CAIPPER — the Center for the Advancement of InterProfessional Practice, Education and Research — by the Illinois Board of Higher Education in July 2022. UIC has the mandatory core **Foundations of Interprofessional Collaborative Practice** course that is taken by over 1,300 students each year from 13 health professions education programs across all UIC campuses. In addition, there are many other interprofessional education learning experiences offered to UI Health students through collaboration within UIC health professional colleges. In addition, we have set our sights on the development of collaborative practice at UI Health to establish a national example of a successful clinical learning environment for collaboration. At the UIC College of Dentistry, our goal is to enhance collaborative learning across health care professions to improve patient care. Several initiatives in interprofessional education have been established across several areas: nutrition and oral health, smoking cessation, special needs care, and occupational therapy (OT) for patients with special needs. These initiatives are described briefly below, with the nutrition and oral health activities described in more detail as an example of how UIC's IPE courses are developed and organized.

## Smoking Cessation Practice for Pharmacy and Dental Students

Our smoking cessation initiative integrates pharmacy and dental students, emphasizing the importance of interdisciplinary efforts to help patients quit smoking. Smoking is a leading cause of oral diseases like periodontitis and oral cancer. Pharmacy students contribute expertise in pharmacotherapy, while dental students focus on the oral health risks. Through role-playing and patient counseling exercises, students collaboratively develop effective strategies for tobacco cessation, preparing them to provide comprehensive care in clinical practice.

## Special Needs Care for Nursing, Pharmacy, and Dental Students

Patients with special needs often require coordinated care from multiple health care professionals. Our interprofessional program, involving nursing, pharmacy, and dental students, addresses the complex health care needs of this population. Through joint clinical rotations and case reviews, students learn to collaborate in real time, tailoring care to the needs of patients with developmental disabilities, cognitive impairments, and physical challenges. This fosters a deeper understanding of the multidisciplinary approach needed to treat vulnerable patient groups.

## OT for Patients with Special Needs: Collaboration Between OT and Dental Students

We have also introduced a program where OT students collaborate with dental students to provide better care for special needs patients. OT students bring valuable insights into physical and sensory accommodations, helping dental students adapt procedures for patients with physical or cognitive limitations. This partnership enhances patient-centered care, allowing both groups to develop strategies that improve the comfort and outcomes of special needs patients in dental settings.

## Collaborative Empowerment Through IPE: Nutrition and Oral Health Initiative

The College of Dentistry and the Nutrition arm of the Department of Kinesiology and Nutrition at University of Illinois Chicago have been collaborating to give students interprofessional experiential learning for the last three years. In our most recent collaboration, we have integrated interprofessional learning into core courses in each program's curriculum.

The learners are first-year dentistry students and a mix of undergraduate and graduate nutrition students. The rationale for the IPE program was explained in the individual courses, and the format consists of three in-person sessions with students from both courses. The three sessions were a combination of large-lecture and small-group learning. The students worked together on clinically relevant projects and presented their projects in each of the sessions. We began with roles and responsibilities to allow the students to educate themselves and each other about their professions. The second session centered on increasing cultural awareness and having them learn and educate the groups on different cultures around the world. This enhanced their perspective on food cultures and promoted important discussions on how to consider the individual cultures of their patients and tailor their education plans. The third session sought to bring all the topics together and apply them in patient case studies. Students worked in groups to review cases, interview a simulated patient, and create a care plan.

### Session 1:

- Objectives
  - Recognize the significance of IPE
  - Identify the roles/responsibilities of various health care providers for specific patient care
  - Anticipate potential IPE-related challenges and strategies to overcome them
  - Engage in active discussion about IPE perception and experience

- Outline
  - Overview of IPE is provided.
  - Cohort is divided into four working groups for active student-led learning.
  - One facilitator is assigned to each group for passive involvement.
  - One student leader and one transcriber for each group are elected by the group members.
  - One case domain is assigned to each group.
  - Each group has a discussion around the assigned case.
  - Each group presents a PowerPoint graphical presentation based on the case.
  - A Q&A session is held after each presentation.
  - Online feedback is provided by all the students at the end of the session.

### Session 2

- Objectives
  - First-year nutrition (N1) students demonstrate their understanding of the MyPlate model of the five food groups from the US Department of Agriculture and cultural competency by educating the first-year dental (D1) students in these areas.
  - D1 students demonstrate their understanding of oral health as it relates to nutrition by educating the N1 students in these areas.
  - All students understand and demonstrate how to collaborate and provide oral health-related nutrition recommendations to patients in a culturally sensitive manner.
  - All students demonstrate their understanding of oral health-related nutrition recommendations through a group presentation.
- Outline
  - Large-group overview
  - Small-group work
    - N1 students provide education on MyPlate and culturally focused adaptations.
    - D1 students provide education on oral health-related nutrition concerns.
    - Both groups collaborate to create a culturally relevant MyPlate and education plan for dental patients using an assigned country.
    - Students give presentations to the large group that summarize their shared discussions.

### Session 3

- Objective
  - Students use the knowledge they have gained about each other's professions to create comprehensive patient care plans through case studies and presentations with student actors.
- Outline
  - Students are divided into two groups and review the same two patient cases.
  - Student actors act as the patients, and the groups take turns interviewing them.
  - Groups create a care plan for their patients and share them with each other.
  - Students give feedback on the care plans.

In creating this program, we built upon the principles of IPE experiences. The College of Dentistry and Department of Kinesiology and Nutrition already had a strong rapport; the faculty from these programs were committed to improving students' knowledge and experiences. The research showing the link between oral health and nutrition is vast and indisputable,<sup>1</sup> and yet the two professions rarely interact.

By introducing the two professions in the early stages of their education, we are helping to foster this relationship and establish trust. Dentistry and nutrition students develop their education skills by informing each other about their professions, learning about how their values intersect and how they can work together to devise care plans and establish communication lines in their future practices. The practical applications of their foundational knowledge and development of their soft skills in communication are vital in their professional development. By working together, dentistry and nutrition can help to prevent and manage diseases in people and reduce complications.

Our program's sessions were developed with teamwork in mind. The two professions were asked to work together on three different projects to demonstrate and apply what they have learned. By working together now, we are strengthening their professional bonds and increasing the potential of collaboration and referrals in their future clinical practice.

### Assessment Methods

We had both pre- and post-session assessments for this series of sessions using the validated Student Perceptions of Interprofessional Clinical Education — Revised, version 2 (SPICE-R2) instrument.<sup>2</sup> It was distributed to the participants via QR code and survey link. In addition, the students provided qualitative feedback in the form of experience reflections.

These methods, in conjunction with the session projects, showed how we were successful in meeting our objectives and expectations for this interprofessional experience.

### Scalability, Sustainability, and Transferability of the Program

This program focused on providing education to health care professionals so that they can better help their patients. We have three sessions focusing on roles and responsibilities, cultural sensitivity, and clinical case work. These are all areas that are at the core of any health care profession. The exercises could be **transferable** to other nonclinical professional areas by simply changing the topics and audience of the sessions. For example, it could be translated into a business-related model by focusing on a corporation's clientele and using a company project as a case study.

Our group sizes ranged from 10 students to 97. Within our program sessions, we easily pivoted to and from large- and small-group sessions. The program model could easily be **scalable** to groups of any size and incorporate other health professions.

By embedding these experiences into the course curriculum, we have developed a **sustainable** model. If programs do not have the time or resources to include all three sessions in one course, each of the sessions could be a separate workshop incorporated into a series of courses. Each of the core sessions could be built upon to advance the content and create an even more sustainable model that could be relevant at every year of a professional curriculum. While we preferred the in-person format of our sessions, they could have been converted to an online format with very minimal effort to provide additional versatility.

### Conclusion

These interprofessional education initiatives are designed to prepare our students for the collaborative nature of modern health care. By learning together and working across disciplines, students gain the skills necessary to improve patient care through teamwork and communication. These programs not only enhance the individual capabilities of our students but also foster a culture of cooperation that will benefit the communities they serve. Moving forward, we remain committed to expanding these collaborative opportunities to address the evolving needs of health care.

### University of Illinois Chicago College of Dentistry Use Case References

1. "Nutrition and Oral Health," American Dental Association, accessed January 27, 2025, <https://www.ada.org/resources/ada-library/oral-health-topics/nutrition-and-oral-health>.
2. Jo Ann L. Nicoteri, "Evaluating an Interprofessional Activity with the SPICE-R2," *The Journal for Nurse Practitioners* 19, no. 9 (2023): 104736.



# University of Iowa College of Dentistry

*Lance Brendan Young, PhD, MBA*

## Introduction

The University of Iowa College of Dentistry and Dental Clinics provides training in interprofessional collaboration that takes place both within the college and between the college and other health science programs on campus. Within the campus, coursework in IPE is required, and students engage early with College of Dentistry employees who are not oral health professionals, including our pharmacist, social worker, therapist, patient advocate, and behavioral scientist, who is also course director of the IPE curriculum. Students also enroll in two courses directed by the university's IPE Steering Committee. In those courses, dental students learn with and from students in medicine, nursing, pharmacy, audiology, physical therapy, athletic training, and public health.

## Objectives and Benefits

The College of Dentistry's IPE curriculum grounds interprofessionalism in professionalism. Prior to advancing to coursework with peers from other programs, dental students must understand and be capable of representing to peers and patients what it means to be a member of a profession, how their profession's code of ethics operates in practice, where the limits are to their scope of practice, and when to coordinate patient care with others. The IPE Steering Committee has articulated objectives for the courses subsequently taught interprofessionally. Students should be able to:

- Effectively communicate information about their professional identity and unique skills in a manner that is client-centered and engages with the interprofessional team
- Explain the role of interprofessional education in the health professions curricula as it relates to interprofessional practice in the health system workforce
- Describe the roles of health care professions and associated professionals represented in the IPE program in providing patient- and population-oriented care
- Integrate knowledge and experience of other health professionals in providing patient- and population-oriented care
- Share leadership, listen actively, and work collaboratively with an interprofessional team of health professions students

- Elicit a client's health-related goals and include them as an active member of the interprofessional team

Dental students ultimately demonstrate competency in interprofessional collaboration, thereby satisfying CODA Standard 2-20,<sup>1</sup> in their fourth year. Specifically, they must present a patient case following their rotation in the Geriatric and Special Needs Clinic which shows they can (1) identify everyone who should be a member of the patient's care team; (2) specify the information they could provide to, or elicit from, each other member; and (3) initiate contact with at least one other member to coordinate care.

## Program Development

The Interprofessional Education Collaborative (IPEC) formed in 2009 and published the first Core Competencies for Interprofessional Collaborative Practice in 2011. The following year, the University of Iowa formed the Interprofessional Education Steering Committee, which developed a strategic plan. In 2013, the Steering Committee piloted the course **Interprofessional Skills and Team-Based Care**, with students from dentistry, medicine, nursing, pharmacy, and public health. The curriculum then expanded to three courses, sequenced to develop more advanced skills each semester.

Because the introductory course covered some content (like ethical codes and scope of practice) that is specific to each health profession, and because some programs already addressed that content in-house, the IPE Steering Committee decided the first course in the sequence should be taught by the individual programs to their own students. The IPE Steering Committee updates the curriculum, conducts assessments, and regularly reports to the Council of Deans. The 17-member committee comprises representatives from each program and from the Hardin Library for the Health Sciences. In keeping with interprofessional principles, leadership is shared between two co-chairs. A program coordinator is a part-time employee who oversees program administration. Each semester, 600–700 health science students participate in the committee's IPE courses.

In their first semester, students in the College of Dentistry enroll in **Patient Management: Ethics and Interprofessional Education**. In the subsequent two semesters, they enroll in

the courses administered by the IPE Steering Committee. The University of Iowa's clerkship model requires students to begin working in patient clinics near the end of their first year, so they are completing their IPE instruction at the same time they are working with faculty and other professionals to coordinate patient care. Students receive additional instruction in professional ethics — a case-based course — their third year. IPE assessment takes place their fourth year.

## Program Components

- 1. Ethics and Interprofessional Education (Year 1):** In their first semester, dental students enroll in the course **Patient Management: Ethics and Interprofessional Education**. The course is taught interprofessionally. The first half of the course focuses on professional ethics and is taught by a professor of oral pathology, radiology, and medicine. Students attend three lectures on five guiding ethical principles, supplemented by research articles and perspectives exploring those principles. Students also attend three separate sessions in which they discuss case assignments requiring them to make decisions when ethical principles conflict. The first half of the course concludes with a comprehensive exam on ethics. The second half of the course is taught by a behavioral scientist and associate professor of community and preventive dentistry. The first three presentations address the history of dentistry as an example of specialization, the need for interprofessional competency to overcome the challenges specialization presents to patient care, and four barriers to care coordination and how they can be surmounted. In the five remaining sessions, guest lecturers discuss their work and how collaboration enhances patient care in their daily practice. Lecturers have included a pharmacist, a social worker, a periodontist who specializes in oral immunobiology, a pediatric dentist who specializes in cleft lip and palate treatment, a specialist in geriatric and special needs dentistry, a specialist in orofacial pain care, a specialist in craniofacial microsomnia, and a specialist in dentistry for patients in palliative care. Prior to each session, students are assigned readings. After each session, students respond to discussion prompts, reflecting in online small groups on ways the information might inform their own practice of dentistry.
- 2. Team-Based Instruction (Year 1):** The two more advanced courses are administered by the IPE Steering Committee. Each includes a two-hour interprofessional collaborative team experience facilitated by a faculty member. Since the COVID-19 pandemic, these teams have met online rather than in person. Dental students enroll in **Interprofessional Skills and Team-Based Healthcare II** during their second semester. The course focuses on roles and contributions of various health care specializations and explores teamwork and conflict management in health care. Prior to the team experience, students complete a worksheet on health care roles and responsibilities. Students also use a template to create a meme representing their profession from different perspectives: "What \_\_\_\_\_ (friends, society, parents, and I) think I'll do after I graduate." During the online team experience, the facilitator guides students in introducing themselves, setting guidelines for their own collaboration, sharing their memes, and discussing (mis)perceptions of their chosen profession, and then using the health care roles and responsibilities worksheet to better understand the scope of practice of the professions represented. Students subsequently complete the Thomas-Kilmann Conflict Styles Questionnaire<sup>2</sup> and discuss it in an online, small-group discussion forum. The final assignment for dental students requires completion of an online case analysis provided by the University of Iowa's [Center of Excellence in Pain Education](#): "Burning Mouth Syndrome and Related Orofacial Pain."
- 3. Team-Based Instruction (Year 2):** At the start of their second year, dental students enroll in their final course in IPE, **Interprofessional Skills and Team-Based Healthcare III**, while they are working under faculty supervision with community patients in the college's preventive clinic. Prior to the online team experience, students are required to complete a different online case analysis provided by the University of Iowa's Center of Excellence in Pain Education: "Margaret Andersen: An Older Adult with Limited Communication." In the online team experience, students are assigned to a different team than the one they encountered the previous spring. This team is designated as a patient care team, and the facilitator presents students with the case of a geriatric patient with multiple systemic health issues. The team must confer to decide how to engage with the patient. They then meet and interview the patient, portrayed by a professional standardized patient. Students then confer before discussing treatment options with the patient. The experience concludes with a discussion of facilitators and challenges in coordinating care in this patient case. After the team experience, students individually complete and submit the interprofessional collaborative competency attainment survey (ICCAS),<sup>3</sup> an evaluation of the team facilitator, and a reflection on the standardized patient experience in an online, small-group discussion forum.

4. **IPE Integration (Year 3):** Dental students do not receive formal instruction in courses dedicated to IPE in the third year. They are, however, enrolled in courses that reinforce what they learned in their first two years: **Systemic Disease Manifestations, Applied Dental Pharmacology** (taught by an in-house pharmacist) and **Practice of Dentistry in the Community**. The latter course includes **Moral and Ethical Dilemmas in Dentistry**, a six-week module in which students are assigned to smaller groups to analyze a series of ethical cases, with different two-person teams presenting cases each week for four weeks. Many of these cases include dilemmas related to scope of practice, and students are expected to identify opportunities for interprofessional collaboration.
5. **Competency Assessment (Year 4):** In their final year, students are required to complete a five-week rotation in the **Geriatric and Special Needs (GSN) Clinic**. At the conclusion of the rotation, students present one of their cases and focus on the risk of rapid oral health deterioration (ROHD).<sup>4</sup> Due to the complexity of these cases, this rotation was selected for assessment of competency in interprofessional practice. In conjunction with the course director for the GSN rotation, the IPE course director developed a PowerPoint slide template for students to complete and present during their case presentation. The slide and the assessment requirements are presented at the beginning of the rotation so that students may select cases that will fulfill the criteria to (1) identify relevant members of the patient care team; (2) identify the information the student could provide to, or elicit from, each member; and (3) identify at least one of these members with whom they attempt to coordinate care.

## Lessons Learned

The challenges of aligning schedules among different health programs are well documented.<sup>5,6</sup> In addition to time, location is a challenge, especially for dental students on our campus, given that the dental school building is on the periphery of the medical campus and students rarely interact with their peers in other programs. Steering Committee members have lamented the loss of in-person, small-group interaction but acknowledge it is too difficult to manage, considering Iowa winters and the fact that nursing students are enrolled in online courses. On the other hand, interprofessional collaboration is now mostly online, and for dental students who will likely practice some distance from health care clinics, the online interaction may enhance their proficiency in collaboration. Recently, dental students have initiated social gatherings with medical students and have proposed reorganizing a campus chapter of Students for Interprofessional Practice and Education (SIPE). Another challenge is finding cases that are relevant to the variety of

health programs represented. Cases that require no input from dentists undermine the goal of promoting collaboration. So, the dental school representative on the Steering Committee sits on subcommittees updating the curricula, which allows us to better integrate oral health concerns into cases. Finally, the Steering Committee has been proactive in addressing IPEC's updated competencies. Each program submitted a copy of their IPE-related standards, and a pharmacy graduate student mapped the competencies to the new IPEC standards. A curriculum subcommittee has met in person regularly for more than a year (as of this writing) to develop course objectives aligned with the new IPEC competencies. After this work is completed, the IPE curriculum will be updated to meet the new course objectives.

## Conclusion

The University of Iowa College of Dentistry emphasizes professionalism and ethics from the very first semester to provide a framework for students to understand they are part of a patient's care team, even if they rarely copresent with other health professionals. By providing exposure to students and faculty in other health programs, the university's Interprofessional Education Steering Committee enhances dentistry's coursework and students' experiences in the patient clinics. Nonclinical professionals employed by the college reinforce the message that oral health is a team endeavor, something students put into practice in their fourth-year rotation in the Geriatric and Special Needs clinic.

## University of Iowa College of Dentistry Use Case References

1. Commission on Dental Accreditation, "Accreditation Standards for Dental Education Programs," 2022. Accessed January 27, 2025 at <https://coda.ada.org/standards>.
2. Kenneth W. Thomas, "Thomas-Kilmann Conflict Mode," *TKI Profile and Interpretive Report 1*, no. 11 (2008).
3. Douglas Archibald, David Trumpower, and Colla J. MacDonald, "Validation of the Interprofessional Collaborative Competency Attainment Survey (ICCAS)," *Journal of Interprofessional Care*, 28 no. 6 (November 2014):553–558, <https://doi.org/10.3109/13561820.2014.917407>.
4. Leonardo Marchini, Jennifer E. Hartshorn, Howard Cowen, Deborah V. Dawson, and David C. Johnsen, "A Teaching Tool for Establishing Risk of Oral Health Deterioration in Elderly Patients: Development, Implementation, and Evaluation at a U.S. Dental School," *Journal of Dental Education*, 81, no. 11 (November 2017): 1283–1290, <https://doi.org/10.21815/jde.017086>.
5. Afaf I. Meleis, "Interprofessional Education: A Summary of Reports and Barriers to Recommendations," *Journal of Nursing Scholarship*, 48, no. 1 (January 2016): 106–112, <https://doi.org/10.1111/jnu.12184>.
6. Anthony Palatta, Bryan J. Cook, Eugene L. Anderson, and Richard W. Valachovic, "20 Years Beyond the Crossroads: The Path to Interprofessional Education at U.S. Dental Schools," *Journal of Dental Education*, 79, no. 8 (August 2015): 982–996, <https://doi.org/10.1002/j.0022-0337.2015.79.8.tb05990.x>.

# University of Michigan

*Adrienne Lapidos, PhD; Burgunda V. Sweet, PharmD, FASHP; and Hannah Edwards, MHM*

This section will discuss four courses at the University of Michigan (UM) that engage dental and dental hygiene students in interprofessional education (IPE).

- 1. Introduction to Interprofessional Education** is an introductory, didactic, 3.5-hour asynchronous module. It introduces students to the current health care landscape through the perspectives of patients and families, faculty, and peer student leaders. The module integrates introductory learning on the importance of interprofessional education and collaboration, exposing students to all four Interprofessional Education Collaborative (IPEC) competencies and a fifth UM-specific competency: Intercultural Humility. Students must self-reflect through teachings on the competencies and then participate in an interprofessional case study, applying the competencies to a real case.
- 2.** Learning is assessed through the [Interprofessional Socialization and Valuing Scale \(ISVS 9A/9B\)](#) to understand the shift in attitudes related to IPE as students begin to develop their professional and interprofessional identities. Content is designed for students across the 10 UM health science schools and is ideal for learners early in their programs, integrating learners from the UM Ann Arbor campus (Dentistry — DDS; Dental Hygiene — BS; Dental Hygiene — MS; Kinesiology/Movement Science — BS; Applied Exercise Science — BS; Athletic Training — MS; Medicine — MD; Nursing — BSN; Pharmacy — PharmD; Public Health — MPH; Social Work — MSW), Flint campus (Nursing — BSN; Accelerated BSN; Health Sciences — DPT, OTD, BSRT, PA, DNAP), and Dearborn campus (Education, Health, and Human Services — MHIT).
- 3. Team-Based Clinical Decision Making** is a large-scale, 13-week IPE course that has been taught at UM since 2015. The course has been required for all third-year pharmacy students, third-year dental students, advanced practice nursing students, and social work students training for clinical care since its origin. Over the years, first-year medical student involvement has increased from three weeks in 2019 to eight weeks in 2024; changes in medical student involvement were related to curricular revisions occurring in the medical school. Total enrollment in the course is approximately 500 students each year. Given the size of the course, enrolled students are divided into one of five sections, with each section taught by an interdisciplinary pair of faculty members who model the importance of interprofessional communication and collaboration. Within each section, students are assigned to an interprofessional team on the first day of class; students stay with their assigned team for the entirety of the semester. Teams consist of 8–10 members, with each team having at least four of the disciplines represented.
- 4.** Class meets once weekly for two hours, allowing students time to develop team dynamics as they collaborate on patient cases and medical topic discussions throughout the semester. From 2015 through 2020 the course was held in person. In 2021 it was moved to a virtual platform (Zoom) in response to the COVID-19 pandemic and has remained a live virtual course since 2021. The primary outcomes for the course include defining the unique roles that different disciplines bring to the health care team, examining how differing viewpoints can affect patient-care decisions, and recognizing personal and team attributes that improve or compromise team effectiveness.
- 5.** To assess course outcomes, students complete the Interprofessional Collaborative Competencies Attainment Survey Revised (ICCAS-R), a validated self-assessment instrument used to quantify perceived interprofessional competency in six domains: communication, collaboration, roles and responsibilities, collaborative patient/family-centered approach, conflict management/resolution, and team functioning.<sup>1</sup> Using a five-point Likert scale, respondents rate their abilities in 20 areas before and after participating in the course. To develop and assess teamwork skills, teams develop a team contract at the start of the semester that includes five elements of high-performing teams: preparedness, reliability and respect for others, engagement in and contributions to discussions, active listening, and attitude and energy. Three anchors are included to help students interpret the contract's use (disengaged performance, acceptable performance, and exceptional performance), and specific definitions are included for each attribute to describe the behavior. Collectively, team members agree on their expectations in all five areas. Each teamwork attribute is self-assessed during the first five weeks of the semester, allowing students to reflect on their own contributions as members of the team. Points are given for completing the self-assessment, regardless of how they self-assess their performance. The goal is to allow students to honestly reflect on their performance and identify areas

for improvement.

- 6. Understanding and Improving the US Health Care System** is an asynchronous online course offered by the UM Institute for Healthcare Policy and Innovation (IHPI). Originally developed in 2015, and substantially revised in 2024, this six-week course uses a mix of video-based lectures, interviews, online discussion forums, and virtual interprofessional small-group activities to introduce learners to the main topics related to the historically complex US health care system, including US presidents and the politics of health care reform; behavioral health policy and services; cost, quality, and access to care; health equity; and the special topic of diabetes in US health care. The course is team-taught by faculty across disciplines such as medicine, dentistry, nursing, pharmacy, law, public health, and psychology. The course is required for all first-year dental students, medical students, and pharmacy students, and is an elective course for public health students. In 2024, more than 400 students were registered. Asynchronous discussion board activities prompt students to consider topics such as how team-based care could address the issue at stake interprofessionally by working together, and how their own discipline would respond to the issue at stake with unique roles, responsibilities, and values. Select items from the Interprofessional Socialization

and Valuing Scale (ISVI-21) are included as part of the assessment of student progress in IPE competencies.<sup>2</sup> With the completion of its first year since the 2024 revision, the instructional team and key stakeholders are considering how to balance the convenience of an asynchronous online approach against the depth and greater commitment required of a face-to-face course.

- 7. Interprofessional Team-Based Care** is an online course designed for graduate health professional students to gain an understanding of how each discipline contributes to the health care team, the importance of effective communication, and the role of team collaboration in clinical decision making. First-year Master of Science dental hygiene students participate in this course.

## University of Michigan Use Case References

- Connie C. Schmitz, David M. Radosevich, Paul Jardine, Colla J. MacDonald, David Trumpower, and Douglas Archibald, "The Interprofessional Collaborative Competency Attainment Survey (ICCAS): A Replication Validation Study," *Journal of Interprofessional Care* 31, no. 1 (2017): 28-34. <https://doi.org/10.1080/13561820.2016.1233096>.
- Gillian King, Carole Orchard, Hossein Khalili, and Lisa Avery, "Refinement of the Interprofessional Socialization and Valuing Scale (ISVS-21) and Development of 9-Item Equivalent Versions," *Journal of Continuing Education in the Health Professions* 36, no. 3 (Summer 2016): 171-177. <http://dx.doi.org/10.1097/CEH.0000000000000082>.

# University of Nevada Las Vegas (UNLV) School of Dental Medicine

Jessica Owens, DMD, MA

## Introduction

Interprofessional education and collaboration have been essential components of health education at the UNLV School of Dental Medicine (SDM) for more than a decade. After opening its doors in 2002, UNLV SDM was an early adopter of integrated interprofessional experiences and curriculum designed to support improve health outcomes and promote person-centered care for our diverse community. Supported by our parent university, the investment in health-related programs, and the establishment of UNLV Health and the Academic Health Center, interprofessional education and the emphasis on collaborative and community-focused care at UNLV continues to grow.

## Program Development

The diversity and rapid growth of the Las Vegas population in recent decades has led to an expansion in the health professions programs offered at UNLV and placed an increased focus on the need for collaborative and coordinated care. The curriculum has been designed to support this mindset, with courses embedded throughout the four-year program providing foundational knowledge and exposure to other professions, the oral-systemic connection, and improving patient outcomes through collaborative care.

The UNLV SDM has a multipronged approach to interprofessional education, ranging from interinstitutional clinical education and practice with local dental hygiene and dental assisting programs to the establishment of

dual-degree programs with other schools in the university, to participating in community outreach with students from multiple health profession programs, to the formation of designed interprofessional experiences that occur on an annual basis. Since 2014, our dental students and faculty have participated in an interprofessional education collaborative, first established with students from dental medicine, nursing, social work, physical therapy, and psychology. This collaborative has continued to grow year over year, exposing students to myriad health professions and providing opportunities to work in teams to examine case scenarios that all students might encounter in their future practice. As SDM has continued to expand these collaborative opportunities, the university has worked to create a medical district, with the establishment or relocation of several health professions programs to this campus. As the Academic Health Center has continued to grow, so too have the opportunities to create meaningful shared interprofessional experiences to support a future generation of collaboration-minded practitioners.

## Program Components

- 1. Designed Curricular Tract (Years 1–4):** The didactic curriculum at SDM related to interprofessional education is designed to provide a foundation as well as increasingly integrated exposure to collaborative practice. The goals are to allow students to understand the basis for routine collaborative care and to help them develop an interprofessional mindset as a component of their professional development. Early in the curriculum, there are courses dedicated to foundational topics such as communication, nutrition, the oral-systemic connection, public health, and community engagement. Guest lecturers from different disciplines are embedded throughout the curriculum, highlighting the importance of collaboration with other members of the health care team to improve patient outcomes. The foundational knowledge acquired in these early courses is integrated into more advanced clinically oriented courses such as the Clinical Medicine Continuum and Interprofessional Practice in Health Care. Students are expected to demonstrate the knowledge and skills gained through this curriculum as a normalized component of clinical care, culminating in multiple summative experiences in their final year of study.
- 2. Clinical Exposure (Years 1–4):** Students begin with a full-year introductory curriculum on clinical care. In one of these first semesters, students learn the basics of periodontal instrumentation from and alongside dental hygiene students from another local institution. Students begin independent clinical care in their second year. Communication and collaboration with other members of the health care team is emphasized throughout their clinical curriculum. Throughout their clinical training, students are expected to develop and employ team dynamics for patient care, use interdisciplinary consultation and/or referrals for their comprehensive care patients, and reach out to other professionals to gather and convey information. Through a collaborative effort with the School of Social Work, students pursuing a master's degree in social work are available during the fall and spring semesters to help SDM patients who would benefit from specific external resources. As they enter their final years of training, demonstrations of their ability to communicate and provide collaborative care are evaluated through multiple competency assessments, in line with our philosophy that competence is not determined by a single encounter, but rather by an accumulation of experiences over time.
- 3. Poverty Simulation (Year 1):** All first-year dental students participate in an immersive Poverty Simulation exercise alongside students from the Schools of Nursing, Public Health, and Medicine and the department of Physical Therapy. This experience, held twice per year, uses team-based learning involving simulations that demonstrate what families living near or below the poverty line might experience. This can involve being homeless and seeking help, going to work and needing daycare, looking for employment, having to pay rent and bills, or needing various health care services. After participating in the interactive session, students are debriefed about poverty in the US, including the individual and societal factors that may affect their future patient base. They are also informed about the resources available, and the challenges connected with community services.
- 4. Interprofessional Experience and Practice (IPEP) Day (Year 3):** One of the core activities in the IPE program involves participation in the annual UNLV Interprofessional Experience and Practice (IPEP) Day. At this event, held each spring, more than 400 UNLV students from the various health professions programs participate in a team-based learning experience. As of 2024, this included students from programs in medicine, dentistry, couples and family therapy, nurse practitioner, occupational therapy, physical therapy, psychology, and social work. Along with receiving general information regarding interprofessional education and collaborative practice, teams of students work through two case studies, developing case plans that involve the various health professions. This is accompanied by open discussions about specific topics embedded in the cases, as well as recommended and required prework through a shared Canvas course in which all participants are enrolled. Cases often include complex real-world

scenarios, such as patients with mental or physical disabilities, experiences of child abuse or suicidal ideation, or the need for end-of-life care. SDM has integrated this activity into the curriculum for our DS3 cohort, believing this to be the point in their education where they will get most benefit.

**5. Community Outreach Programs (Years 1–4):**

Community engagement is an integral part of the curriculum, providing students with opportunities to take part in myriad activities that support interprofessional engagement. With the goals of continuously increasing the number of affiliation agreements with community partners and expanding the available opportunities for SDM students, we have established both elective and required experiences, many of which allow for dental students to work alongside peers from other health professions in our effort to reach underserved populations in our region. Specific examples from the last few years include an expansion of health fairs and wellness events; an increased commitment to the local school district to offer preventive services, including a school sealant program; and the opportunity to provide dental care in a community clinic that also offers medical care, pharmacy access, and social and behavioral services. Students are required to participate in designated activities in DS2 and DS3 years and are allowed and encouraged to participate in elective activities in all years of study.

**6. Self-Reflection (Years 1–4):** An important component of this curriculum is how these experiences and exercises have affected our student dentists. Many courses include self-reflection, such as responses to community outreach activities, the annual IPE experiences, and clinical care.

Students can consider how these opportunities helped them grow as providers and how this will inform their future careers. SDM considers this a vital component of the IPE program.

## Lessons Learned

In developing and implementing our IPE program, we have encountered significant challenges as well as unique opportunities. As is true for many schools, finding time to facilitate these experiences is one of the biggest challenges. We have found so many willing partners across the campus community, but it is always difficult to align experiences with the other Health Science schools, especially as we have different academic calendars. It has also been a challenge to establish mutually beneficial objectives. To align our objectives, it has been helpful to communicate the requirements of our respective accrediting bodies.

With the many changes that occurred over the last decade, we have needed to be flexible with our approach to IPE, including walking away from experiences that we were not able to appropriately support due to other external factors. One important benefit we have is the commitment, both within the school and from our surrounding university community, to prioritize IPE. Without support from school leadership, these programs will not be successful. We recognized early on that we needed champions for interprofessional education and collaborative practice within our faculty. These experiences require regular participation from all the participating schools to be successful, and having a dedicated team that believes in what we are trying to accomplish has been critical to the success of our IPE program.

# University of New Mexico Health Sciences

*Robin Gatlin, MS, RDH*

The University of New Mexico (UNM) houses an Office for Interprofessional Education (IPE), which offers Health Science students the opportunity to participate in an IPE Certificate of Honors program. This program brings students together and provides a learning environment where they can practice patient-centered health care delivery in a collaborative environment. The program is also decentralized, allowing students from various campuses and all levels of education to come together. The IPE Certificate of Honors program has

more than 1,000 students participating from UNM colleges and schools. The following is a list of programs that participate, with more programs joining every semester.

- College of Arts and Sciences
  - Speech and Hearing Sciences
- College of Education and Human Sciences
  - Athletic Training and Exercise Science

- Nutrition and Dietetics
- College of Nursing
- College of Pharmacy
- College of Population Health
- School of Law
- School of Medicine
  - Anesthesiologist Assistant Program
  - Dental Hygiene
  - Dental Medicine
  - Emergency Medical Services
  - Medical Laboratory Sciences
  - Medical Doctorate (MD) Program
  - Occupational Therapy
  - Physician Assistant
  - Radiologic Sciences

To graduate with IPE Honors, students must fulfill a required number of experiences and complete the post-participation survey for the following categories: Informative, Elective, Interactive, Executive, Innovative, and Initiative. While many events are offered throughout the Certificate Program, a few are offered on a quarterly and/or annual basis, such as HIV in Primary Care, the Poverty Simulation workshop, the

Ethics conference, Mass Casualty Simulation, the Geriatric elective, and IPE Day (see [https://digitalrepository.unm.edu/hsc\\_ipe/](https://digitalrepository.unm.edu/hsc_ipe/) for additional IPE events). These events often take place in the Interprofessional Healthcare Simulation Center (IHSC) and the Basic and Advanced Training—Computer Assisted Visual Experience (BATCAVE) at the University of New Mexico. The simulation environment allows students, staff, and faculty to work together in person and online to enhance skill development and collaboration. Every IPE event has a cross-walk, or a document that outlines what [IPEC Competencies](#) are addressed and the interprofessional behaviors that are experienced during the IPE event/activity. Students can select which events they would like to participate in based upon their interests. However, some events are built into the program's curriculum to ensure participation from a variety of professions and minimize scheduling conflicts. As the students approach graduation, they must participate in an immersive/reflective activity where they can provide feedback on the program.

Regularly scheduled meetings, attended by at least one representative from each participating program, have helped with planning, implementing, and ensuring that a variety of professions are represented in IPE events. The meetings have also helped to ensure that accreditation standards across the various programs are met and that event topics are relevant to the student participants. Interprofessional education requires a team of professionals coming together, just as interprofessional collaborative care does.

# University of Pittsburgh School of Dental Medicine

*Richard W. Rubin, DDS, MPH; Nina Markovic, PhD; and Nyla Balakrishnan, BDS, MPH, MS*

## Introduction

The School of Dental Medicine (SDM) and the University of Pittsburgh are aligned in their commitment to creating a diverse, culturally competent workforce that is willing and able to meet the health care needs of all residents of the region. This commitment has motivated the SDM to enhance the cultural competency curriculum, reinforce research programs, and expand community-service opportunities as part of the overall effort to improve access to care and reduce oral health disparities. Within these parameters, IPE is essential for creating a cohesive health care workforce that can effectively meet the complex needs of patients; IPE helps health care

professionals understand each other's roles, strengths, and areas of expertise. This understanding allows team members to leverage each other's skills effectively, ensuring that all aspects of a patient's and community's care are addressed.

## Objectives

1. Create a collaborative environment that encourages health care teams to work together to address patients' needs; they then become better able to adapt their care to the cultural and social contexts of communities, families, and individual patients, ultimately promoting more inclusive, respectful, and culturally sensitive care.



2. Promote self-reflection, which serves to help professionals recognize their own biases and limitations.
3. Encourage a multidisciplinary approach that helps to reduce errors, improve continuity of care, and empower patients by involving them more actively in decision-making.
4. Enable the ethical and moral support necessary for effective health care practices; without IPE, health care providers might lack the understanding and ethical tenets needed to work together efficiently. This collaborative learning environment strengthens the moral power of the entire health care community, ensuring that individual professionals are not isolated in fulfilling their obligations.

By cultivating a shared sense of responsibility and support, IPE empowers health care teams to address complex challenges, reinforcing that collective strength is crucial for individual success in the practical world.

### Program Development:

Whether the focus is on community service, cultural competency, person-centered care, or interprofessional education, the above objectives have grown over the past 20 years from a “hidden curriculum” to an invigorated, well-received, and seamlessly interwoven cultural shift recognized by students, faculty and the community. In our programs, students are often exposed directly and/or indirectly to the benefits of working across professional boundaries. A few illustrative examples are given below; they reflect the broader commitment to fostering a collaborative learning environment that prepares students for real-world health care settings.

#### *The Leadership Education in Neurodevelopmental Disabilities (LEND) Traineeship*

A fellowship sponsored by the University of Pittsburgh and Children’s Hospital, entitled “Leadership Education in Neurodevelopmental and Related Disabilities” (LEND), is an educational program funded by the Maternal and Child Health Bureau (MCHB) under the Health Resources and Services Administration (HRSA-Grant #MCH 2T73 MC 00036-15-01) within the US Department of Health and Human Services (DHHS). For further information, please visit [www.LEND.pitt.edu](http://www.LEND.pitt.edu).

Pittsburgh LEND is one of 60 nationwide programs that help professionals from diverse disciplines to take on leadership roles, improve interdisciplinary clinical competence, and enhance care for youth and adolescents with complex disabilities. Typical groups of students include those completing advanced degrees in audiology, speech and language, psychology, physical and occupational therapy, medicine, and others. The program emphasizes culturally competent/coordinated care and actively involves families

in both training and service delivery. In the past, the LEND curriculum has not been conducive to dental student activity due to time and curricular restraints. Over the past few years, a shorter version of the LEND program (MTT — Medium-Term Traineeship) has been offered to a variety of professional schools (including dental), which has given dental students the opportunity to learn many interprofessional skills required for treating special-needs populations. The MTT program offers a multidisciplinary approach, designed to provide participants with training in key areas of LEND, including topics such as team-based service delivery, family-centered care, and background on autism and other disabilities. A LEND MTT experience can occur within a single semester or across a one-year span (usually years 3 and/or 4). Those who complete the program receive a federally endorsed certificate of MTT participation.

MTTs participate in some required online LEND sessions, which may occur synchronously or asynchronously. Other required LEND experiences may include activities and/or community projects that are designed based on one’s personal interests, such as continuing involvement in community service, clinical activities, research, engagement with community organizations. For example, each year, dental students present a dental panel, which is targeted toward the other professional students in LEND. Also, students have participated in oral health education at the [Western Pennsylvania School for Blind Children](#), the [Provident Charter School for Children with Dyslexia](#), the [Special Olympics](#), and “ACEing Autism” (a sports-related activity for children with autism). A dental student–designed pilot survey indicated that LEND activity improved students’ communication skills and interaction with patients and their families, encouraged multidisciplinary care and dialogue, and helped to reinforce a positive state of mind toward people with disabilities.

Students at the SDM are provided with opportunities to communicate and collaborate with other members of the health care team throughout the predoctoral curriculum. These interprofessional educational experiences for dental students have been designed to align with competencies described in the Core Competencies for Interprofessional Collaborative Practice, Version 3 ([www.ipecollaborative.org](http://www.ipecollaborative.org)) and address the following areas:

- Work with team members to maintain a climate of shared values, ethical conduct, and mutual respect.
- Use the knowledge of one’s own role and team members’ expertise to address individual and population health outcomes.
- Communicate in a responsive, responsible, respectful, and compassionate manner with team members.

- Apply values and principles of the science of teamwork to adapt one's own role in a variety of team settings.

### **Year 1: Interprofessional Forum**

Students participate in an interprofessional forum that includes all first-year students from the health science schools at the university. The Schools of Dental Medicine, Medicine, Nursing, Pharmacy, Public Health, Social Work, and the Rehabilitation Sciences participate in a simulated patient case review. Students are assigned to an interprofessional student group of approximately 20 students and meet with an interprofessional pair of faculty facilitators. This interprofessional group meets via Zoom to review a complex case study presented by a team of faculty and a standardized patient. Working in small interdisciplinary teams, the students discuss the case based on their respective health profession's interest in the case. Students complete a pre- and post-forum assessment. Also, dental students conduct an interview with a student from another professional school, reporting on what they learned about the other profession. Assessment methods include group projects/group work, simulation exercises, standardized patient activities and written work.

### **Years 1 and 2: Student Community Outreach Program and Education (SCOPE I)**

Developed in 2000, SCOPE is mandatory for all entering dental students. They are required to perform 50 hours of mostly non-dental, public health–related services in a variety of community settings. SCOPE I activities may begin as early as the first few weeks of dental school and must be completed by the end of students' second year. By working in non-dental settings, students encounter a broad range of patients, family, and community preferences and needs. In these settings, students can more directly experience the multidisciplinary links among public health, medicine, and dentistry as they are exposed to both racially and culturally diverse environments and perspectives. Examples of services selected include volunteering for groups addressing disaster relief, treating individuals with mental and physical disabilities, working with families of sick children, and participating in fundraisers for groups targeting AIDS, diabetes, and breast cancer. Other events may include the Recovery Walk, Mission of Mercy, Panther Smiles, Honduras mission trip, working at soup kitchens and women's shelters, working with foster care children, and "[Bridging the Gaps](#)" internship opportunities. Students are required to submit written reflective journals.

### **Year 3 and 4: Pretreatment Evaluation and Medical Risk Assessment**

Students gain experience in communicating and collaborating with other members of the health care team in this team-taught clinical course by completing medical consultations and

follow-up regarding the impact of the findings on patient care. Students are required to conduct medical consultations with any assigned patient who meets the indications for a consult. Students work with faculty to develop a consult request to the patient's primary or specialist provider; they then review the consultant's response and determine how the patient's medical condition may require modification to their dental treatment plan. Students must complete a minimum of two medical consults. The results of the consultation are included in the electronic health record to alert all providers to the patient's specific needs. Assessment methods include case-based, patient-based competency exams.

### **Years 3 and 4: Dentistry for Patients with Special Health Care Needs**

Students gain additional interprofessional communication knowledge and clinical experiences during these didactic and clinical courses. Students learn about collaboration and decision-making with medical providers in connection with obtaining patient health histories and lists of medications. Topics covered in the didactic course include: determining when it is important to request a medical consultation; risk vs. benefit when determining appropriate treatment for those with multiple medical co-diagnoses or disabling conditions; discussions with caregivers to obtain accurate information about the patients' medical and dental histories; and communicating with other health care providers, such as nurses and other staff members in care facilities regarding oral hygiene instructions and nutritional counseling.

In the clinical courses, students provide care for patients being treated at the Center for Patients with Special Needs (CPSN) and frequently interact with the caregiver attending to the patient. Patients from a nearby psychiatric hospital are also treated in the center, and students communicate with psychiatric providers regarding the patient's dental treatment needs. Nurse anesthetist students rotate in the center, and a nurse practitioner faculty member is integrated into it; both give students an opportunity to observe and collaborate with health care providers outside the dental medicine realm. Students and faculty complete a Clinical Student Evaluation Form that includes a self- and faculty assessment of interprofessional verbal and written communications related to the patient's care. Assessment methods include written exams, written work, observation/feedback, and daily clinical grades.

### **Years 3 and 4: Interprofessional Experience**

An interprofessional educational experience rotation is required for fourth-year dental students at the SDM. Students may select from a variety of interprofessional (IP) experiences to complete this requirement. Given that students have special interests and may have difficulty in coordinating activity/

experiences with other health professional schools, allowing dental students to select the experience that matches their interest and schedule has allowed us to offer meaningful and timely experiences for each student. All students must complete at least one IP experience. Table C lists the offered IP experiences and other health professionals involved with the experience. The two most popular IP experiences are described in more detail below.

In response to the COVID-19 pandemic, the university established the Pitt CoVax Vaccination Center, which provided COVID vaccinations to the university and surrounding community members. Dental students joined this effort, working with professionals and students from pharmacy, medicine, and nursing to provide vaccines and/or vaccine education. Students participating in this experience learned to communicate, understand roles and responsibilities, and work as members of an interprofessional health care team. As it became evident that this was an extraordinarily successful interprofessional experience for many students in the health sciences, the Pitt CoVax Vaccine Center was rebranded as the Pitt Vaccination and Health Connection Hub (PittHub) in 2022. Dental students may complete their IP experience rotating at the PittHub, where they partner with students from nursing, pharmacy, and medicine to provide health screenings, vaccination education, and patient education. While there, students participate in interprofessional team-building activities, such as an Interprofessional Pathways Discussion, as part of the rotation.

Dental students who choose the Interprofessional Geriatrics selective course to meet their IPE experience requirement participate in a three-day intensive course for students across the health sciences. Medical, pharmacy, dental, nursing, social work, physical therapy, occupational therapy, physician assistant, and audiology students participate in the selective course organized by an interprofessional faculty team. Students are assigned to interprofessional teams as they learn to apply the [“5 Ms” \(Mind, Mobility, Medications, Multicomplexity, and Matters Most\) of geriatric health](#). The course is designed to be interactive, with a focus on interprofessional teams’ skill development and recognition of the aging process. Teams complete case studies and interview older adults living in the community and those residing in long-term care facilities to develop an understanding of geriatric patients.

In addition to these popular IP experiences, several courses are available to satisfy the requirement for IP experience. The courses include Head and Neck Cancer Survivorship Clinic, Health Law Clinic IPE, Literature and Film to Understand Patient-Provider Experiences, and the Community Outreach Experience with Vulnerable Populations.

#### *Year 4: Student Community Outreach Program and Education (Clinical SCOPE II)*

Clinical SCOPE II has grown to serve many sites throughout western Pennsylvania. The goal is to give students valuable clinical training and experience in helping underserved populations while enhancing the clinic’s ability to provide necessary dental care to their communities. There are currently 18 community-based dental clinics affiliated with SCOPE. Most of these sites are either hospital-based or Federally Qualified Health Centers (comprehensive multiprofessional clinics). The locations span underserved locations throughout Pennsylvania, with some sites in Ohio, Virginia, and Maryland. Both SCOPE programs require students to complete reflective journal writings and complete pre- and post-program surveys reflecting their professional growth and development.

#### *The Certificate in Dental Public Health*

Whereas some other dental schools have incorporated their own Certificate and/or Master’s in Public Health programs, these are generally offered to residency students only, resulting in less emphasis on community and public health training for predoctoral dental students. Additional training of predoctoral students may serve to encourage them to offer their clinical expertise to provide the services needed for vulnerable populations. As stipulated in the accreditation standards from the [Commission on Dental Accreditation](#) (CODA, page 15), dental education should provide experiences to engage allied colleagues and other health care professionals in order to “enhanc[e] the public’s access to oral health care and the connection of oral health to general health [to] form a nexus that links oral health care providers to colleagues in other health professions.” Coursework includes a variety of didactic courses with evaluation methods such as journal writing, small-group discussions, online STATA assignments, and other standard testing.

A required practicum is an essential element of the Certificate program. Students are required to identify and research an oral health disparity of a particular underserved or at-risk community, followed by the design, implementation, and reporting of a specific community/public health program. As an example, during the COVID-19 pandemic, a student taught and created a program on oral hygiene techniques to hospital nurses and staff who were treating intubated COVID patients. Other examples include working with (1) refugee populations, (2) parents and young children, (3) women’s shelters, (4) special needs organizations, and (5) local food markets (nutrition counseling). The overall range of project time ranges from 50–100 hours, depending on the project characteristics. As an important interdisciplinary element and course requirement, students must take at least one course

(2–3 units) at the Graduate School of Public Health (GSPH). In the spring of senior year, each student presents a structured final manuscript on their project.

## Conclusion

Critical to the success of dentists as health care providers is interactions with multidisciplinary teams, especially given the known linkages of many disease states to oral health. Our dental school places much emphasis on this need for

interprofessional collaboration. Throughout their dental education, students are provided with didactic, community, and clinical courses that interweave and blend interprofessional models. The University of Pittsburgh and the SDM have implemented an array of interprofessional learning and faculty development opportunities across the schools of health sciences, which demonstrate the commitment of the university’s leadership to interprofessional education.

**Table C. List of Interprofessional Experiences Offered to Predoctoral Dental Students at the University of Pittsburgh**

Experience	Other Professional Students and Residents Involved with the Experience
PittHub / CoVax clinic	Medical, Nursing, Pharmacy, Physical Therapy, Occupational Therapy, Public Health, and Social Work Students, and Pharmacy and Nursing Faculty
Interprofessional Geriatrics selective course	Medical, Nursing, Pharmacy, Physical Therapy, Occupational Therapy, Audiology, and Social Work Students, and Geriatric Residents
Intraoral Exam with Medical Students	Medical Students, and attending rounds with Internal Medicine Residents, Nursing, Pharmacy, and Medical Students
Longitudinal Alliance Project Students	Medical Students, Physical Therapy, Occupational Therapy, Doulas, and Social Work Students, and Community Health Workers
Magee Women’s Hospital Perinatal Clinics	Nursing Students and Obstetrical Residents, Nurses, and Nutritionists
Head and Neck Cancer Survivorship Clinic selective course	Medical, Nursing, Physical Therapy, Audiology, and Speech-Language Pathology Students, and Otolaryngology Residents
Health Law Clinic selective course	Law, Nursing, and Social Work Students and Pediatric Residents
Literature and Film to Understand Patient-Provider Experiences selective course	Pharmacy, Nursing, Speech-Language Pathology, and Audiology Students
SilverScripts — Long-Term Care Residency IP Team Visits	Pharmacy, Nursing, Occupational Therapy, and Audiology Students
CLARION Competition — Case Study Competition	Medical, Nursing, Pharmacy, Physician Assistant, and Physical Therapy Students
Community Outreach Experience with Vulnerable Populations selective course	Nursing, Pharmacy, Medical, and Social Work Students
Student-Initiated IP Experience (e.g., outreach at Methadone Clinic, Health Fairs at Nursing Homes, Nephrology Clinic, Nursing ER Visit Case Studies)	Nursing, Pharmacy, Medical, and Social Work Students
PILOT — Interprofessional Standardize Patient Case	Medical, Health and Rehabilitation Sciences (Audiology, OT, PA, PT, etc.), Nursing, Pharmacy, and Social Work Students
PILOT — OTC Oral Health at Community Pharmacy	Pharmacy Students

*Each student must select at least one site to fulfill IP experience requirements prior to graduation*

# University of Texas Health Science Center Houston

*Khairunisa Hashmani, RDH, EdD*

The interprofessional education (IPE) activities at the University of Texas Health Science Center, Houston (UTHealth Houston) take the form of three different events: a Poverty Simulation, a Mass Casualty Incident Simulation, and an activity focused on vital signs.

## Poverty Simulation

At UTHealth Houston, both the dental and dental hygiene students participate in a community-based poverty simulation designed to put them in the shoes of families trying to make their ends meet. This simulation exercise takes place during the summer semester in the first year of the dental hygiene program and the second year of the dental program. Before the simulation exercise, the students are enrolled in a Canvas course where they are given access to a pretest and an article to read about poverty and social mobility in Houston. The purpose of the test is to collect data on the students' understanding of poverty and available resources.

On the day of the simulation, the students are paired with nursing students to go through a one-hour session consisting of four 15-minute segments. Each segment is meant to represent one week, and the entire session represents one month and ends with a small group debriefing session. Students engage in a role-playing exercise that simulates the lives of families in Houston experiencing poverty. This simulation involves scenarios such as experiencing homelessness and seeking housing assistance, going to work and requiring day care, searching for employment, paying rent and bills, and accessing various health care services. Following the interactive session, students are debriefed on the issue of poverty in the United States, including individual- and societal-level factors that may impact their future patients. They are also educated about available resources and challenges associated with accessing community services. Before the simulation begins, they gather in their "families" to learn about their assigned family profiles. Each group receives a packet containing details about their unique family situation and must work to keep their families sheltered, fed, and together throughout the simulation. The family scenarios are based on actual people living in poverty in the Houston area.

The students interact with various community entities such as a pawn shop, law enforcement representative, utility company, bank, school, community action agency, and others represented by faculty volunteers from different fields. Throughout the simulation course, the families become homeless, have utilities shut off, pawn appliances, or land in jail when they are caught taking part in illegal activities.

Toward the end of the one-hour simulation, the students are split into four smaller groups for a debriefing session led by faculty members. Students discuss how they felt going through this simulation exercise and why they made certain decisions for their families. In previous debriefing exercises, the students have reported feeling sad, stressed, empathetic, and privileged. The goal of this simulation exercise is to educate the health professions students about the realities of poverty that their patients may be facing. It also helps the students build empathy, recognize the multitude of barriers and challenges that low-income patients face, and learn about the resources available to help them. The students are assessed using post-simulation surveys, which are administered after the debriefing session.

This initiative brings together varied disciplines and professionals and builds skills essential for patient care. There is active interaction between the students and volunteer faculty from different fields. While this simulation exercise is highly beneficial, it does present a few challenges. The need for a significant number of volunteers for each session and the extensive preparation time required can be demanding. One recommendation is to create a team of 5–6 faculty from different professions to help with setting up and with debriefing. Faculty should have a few meetings prior to the session to discuss the process, including time management and the debriefing process, and go over the pre-/post-simulation survey. Another recommendation is to administer another survey just before graduation to assess stability of the learning from the simulation.

## Mass Casualty Simulation

Another IPE activity that UTHealth Houston students are involved in is the annual Mass Casualty Simulation in November. The second-year dental hygiene students

participate along with UTHHealth students from McGovern Medical School, Cizik School of Nursing, MD Anderson School of Health Professions, McWilliams School of Biomedical Informatics at UTHHealth Houston, and Houston Community College emergency medical students in a two-part exercise that helps students practice their skills and test their knowledge in responding effectively to real-world emergencies. The goal is to instill a fundamental understanding of the National Incident Management System.

Students take a pretest, then complete the modules in Canvas Learning Management System. The students review the modules and learn all the components needed to be effective in the simulation drill. They are assigned roles such as victims, first responders, or transportation staff members. The students are grouped and first given a scenario inside a lecture hall before entering the tertiary care setting in an outside courtyard. The students are unaware of what they will encounter as they walk into the courtyard.

In the simulated scene, students find a car explosion, fire trucks, active shooters, and Houston SWAT. The students approach and assess the injured, providing care such as first aid and assessment of vital signs while the emergency medical services arrive to transport the victims to the simulated hospital.

Instructors from various UTHHealth Houston schools observe the students' ability to lead and strategize the care of the victims. Afterward, there is a debriefing session to reflect on the simulation and their experience. The instructors provide feedback on ways to work together. Although there is great learning in this simulation, it is a challenge to coordinate schedules. Assessing the growth and learning of the students from this exercise needs to be more than just observation and feedback from the faculty and debriefing. It would be beneficial to have students write a self-reflection paper to be graded with a global rubric. The reflection exercise will have the students think of the scenario and how to handle emergency situations. Another recommendation would be to administer a pre- and post-simulation survey to assess the learning.

## Vital Signs

Learning how to take patients' vital signs is another IPE project at UTHHealth Houston. In their first semester, first-year dental hygiene students join students from the UTHHealth Cizik School of Nursing to learn how to take a thorough medical history as well as assess vital signs including blood pressure, pulse, respiration, and temperature. The emergency management coordinator reviews the process of how to take vital signs with all the students in the classroom using a PowerPoint presentation and demonstrates these skills on a student. The students are put into groups of three, where a nursing student and a dental hygiene student check the vitals of another dental hygiene student. A calibrated dual-earpiece stethoscope is used so that two people are listening to the person's heartbeat.

Students are assessed during the summative exam on their ability to assess blood pressure and are tested on the process of taking vital signs in the clinic. They perform vital sign assessments and obtain medical histories from their student partners while instructors observe the process. This initiative represents an excellent collaboration between the dental hygiene and nursing programs. However, it would be beneficial if instructors could recheck the vitals after the students complete the process to validate the results and provide feedback.

## Lessons Learned

UTHHealth Houston's IPE programs involve collaboration across various UTHHealth schools. To effectively establish and implement a successful IPE program, it is imperative to align IPE activities with the curriculum goals of each respective school. Achieving this alignment requires a thorough understanding of each profession and its accreditation standards to ensure cohesive and unified efforts. Additionally, the creation of a curriculum committee, comprising a faculty member and a student from each program, along with representatives from the Dean's Office and Academic Affairs, contributes to a holistic perspective.

# University of Washington School of Dentistry

Marilynn Rothen, RDH, MS

## Introduction

At the University of Washington (UW) Health Sciences Center, the Board of Health Science Deans (BHSD) produced a 2012 report, “Vision for a Collaborative Future,” that established a shared commitment to interprofessional education (IPE) foundational learning. Overseen by the BHSD, the IPE Task Force, with representation from each of the six health science schools (medicine, dentistry, nursing, pharmacy, social work and public health), launched the first interdisciplinary Health Sciences Center IPE course in 2013. In the early years, students from the six health science schools, along with students in the physician assistant program and dietetics, initially met five times a year, then four times a year, in interprofessional small groups for case-based learning experiences facilitated by interprofessional faculty. In 2016, the BHSD recognized the opportunity to collectively fund a centralized IPE program through the creation of an IPE Steering Committee that ensures the six health science schools meet their IPE accreditation requirements. Additionally, it expanded the UW IPE agenda focus on foundational learning outcomes to include a stronger emphasis on advanced learning outcomes — the practice of collaborative work broadly within communities. The result is the [IPE Core Curriculum](#), enabling all health science schools to provide the required foundational learning, and in addition, to offer collaborative service learning and outreach experience opportunities.

## Objectives

From the [IPE Core Curriculum](#) website:

*The Core Curriculum aims to develop a foundational understanding of other health professionals’ roles and responsibilities, and the skills needed to effectively collaborate with a diverse health care team. The curriculum is designed to give students an intentional and stepwise introduction to IPE and collaborative practice, while helping them to meet their programs’ accreditation requirements for IPE.*

## Program Format

The UW IPE Core Curriculum involves all health professions, giving UW dental students the opportunity to engage with faculty and students in medicine, nursing, dietetics, pharmacy, social work, public health, and physician assistant programs.

The IPE core curriculum is planned and managed jointly by all the health sciences schools at UW through the IPE Steering Committee. The three-part longitudinal Core Curriculum described below runs throughout the academic year, serving more than 800 students at all UW schools of Health Sciences. These Core Curriculum classroom sessions are designed to teach three of the Interprofessional Education Collaborative (IPEC) competency domains: understanding professional roles and responsibilities, communication, and values and ethics for team-based care (IPEC, 2023). Like many courses, the IPE Core Curriculum moved fully online for two and a half years during the COVID-19 pandemic, then assumed a hybrid format, with parts of the curriculum being primarily online, and now, in the 2024–25 academic year, has returned to fully in person. The return to in-person sessions coincided with the opening of the new Health Sciences Education Building, designed with advanced teaching and learning technologies to be utilized by all six health science schools, allowing students to engage organically and breaking down previously siloed teaching and learning experiences. The dental students participate in the IPE Core Curriculum during their clerkship (third) year (D3). In addition to their clerkships and IPE course, year 3 includes four quarters of Ethics and Jurisprudence education.

**Part 1** of the IPE Core Curriculum, offered in the fall quarter, introduces the foundational concepts of interprofessional education and interprofessional practice in two-hour sessions that alternate between large-group and small-group activities. Students learn from each other about their professional roles and responsibilities, the benefits of working together, and skills for effective teamwork, and begin practicing these skills through hands-on learning.

**Part 2** sessions are primarily offered winter quarter, with a few sessions spilling over into the end of fall quarter and the beginning of spring quarter. Part 2 is composed of Bioethics Lab sessions, Active Learning sessions, and Clinical Skills Workshops, involving large-group and small-group activities. Bioethics Lab sessions involve interactive case discussions that focus on ethical dilemmas in the care of patients, such as when patients decline recommended interventions or exhibit psychiatric illness. Active Learning sessions cover topics of shared interest in health care like weight stigma and age-friendly health care. In Clinical Skills Workshops,

students practice important clinical skills that are shared by multiple professions, including reducing errors in vital sign measurement, harm reduction, and team patient encounters. Dental students may select participation in areas of interest to meet the requirement of one Clinical Skills workshop and one Bioethics Lab or Active Learning session.

**Part 3** sessions take place in the spring quarter and are designed for health science students to reflect on their IPE experiences over the year, first in small groups of their own profession and then in interprofessional groups. They are provided with tools and resources to continue to develop IPE and interprofessional practice collaboration as part of their professional identity.

## The IPE Elective Curriculum

Operating under the BBSD and working in tandem with the IPE Steering Committee is the Interprofessional Service Learning Advisory Committee (IP-SLAC), whose objective is to review and approve service learning and community engagement projects that are student-initiated and student-led. These projects allow students to put into practice what they are learning in the classroom while providing needed services to the community. Dental students have the opportunity to join students from across the health professions (medicine, nursing, pharmacy, physician assistants, social work, public health, physical therapy) in community outreach activities through the [Harborview Mobile Health Outreach Program mobile van](#). This project has the potential to reach people living in Tiny House villages, homeless encampments, and other special sites. Other projects include University District Street Medicine outreach, Teeth and Toes services at shelters (involving screening for both dental disease and diabetes), and providing services at housing projects.

## Other IPE Experiences Within the UW School of Dentistry Curriculum

In addition to the specific IPE Core Curriculum requirements and elective activities, dental students have other regular, required, and selective curricular opportunities to interact with a wide variety of other health professions.

## IPE Opportunities Built into Required Curriculum

The first year of dental school sets the stage for interprofessional education. In all of the first-year biomedical foundation courses, dental students co-learn with UW medical students on multiple occasions through interactive lectures, case-based learning discussions, and patient interviews. These courses are often co-taught by UW School of Dentistry and School of Medicine faculty.

The Advanced Pharmacy Practice Experience Program, administered through the School of Dentistry Oral Medicine Department and the UW School of Pharmacy, is a multidimensional approach emphasizing collaboration with pharmacy and dental students. Pharmacy students circulate through assigned dental clinics, review medical histories and medications in real time, and conduct impromptu consultations with dental students and patients as appropriate. In the case of oral surgery rotations, pharmacy students prepare in advance and are ready to participate with dental students in the scheduled presurgical case planning.

Students in the UW physical therapy program train third-year dental students in posture ergonomics during their first clinical course in year 3. This day-long program includes a lecture and simulation exercise/evaluation in the dental clinic.

Through the fourth-year Geriatric Dentistry rotation and the third-year Oral Diagnosis and Treatment Planning clerkship, the attending dentist and students work with nursing home and private living facility providers, including nurses and social workers, to provide comprehensive dental care for community-dwelling medically compromised elderly patients.

In their fourth year, students must participate in service-learning rotations where they work at a community clinic in the Pacific Northwest region for at least five weeks. These interactions give them the opportunity to work with public health care providers.

## Selective IPE Opportunities

Students must choose one or more “selective” courses to take in an area of interest during year 4. The following selective courses offer unique opportunities for interprofessional engagement.

- **Clinical Oral Medicine Rotation at Fred Hutchinson Cancer Center** gives fourth-year students the opportunity to interact with the oncology team in addition to oral medicine providers treating patients actively undergoing cancer therapy, specifically hematopoietic cell transplantation.
- **Interdisciplinary Practice in Transition Care for Complex Medical Needs** is offered in collaboration with the School of Dentistry **Dental Education in Care of Persons with Disabilities** (DECoD program/clinic) and the UW School of Medicine Transition Care Program. Students participate in clinical shadowing of transition care planning for young adults with complex medical needs during the move from child-centered to adult-centered health care.



- **Interdisciplinary Practice and Leadership in Developmental Disability** is a selective course that offers dental students the opportunity to participate in the [UW Leadership and Education in Neurodevelopmental and Related Disabilities \(LEND\) Program](#) as short-term trainees. LEND is an interdisciplinary training program available at multiple institutions nationwide. The program includes didactic education and clinical shadowing of interdisciplinary diagnostic and care services for individuals with developmental disabilities.
- **Medically Complex Pediatric Patient Care** gives fourth-year dental students additional experience in caring for pediatric dental patients with special health care needs. Students collaborate with medical professionals and social workers on a regular basis in providing care to these patients.
- **Rural/Underserved Opportunities Program (RUOP)**, a year 2 selective course, gives students the opportunity to work with public health care providers during their four-week rotation to community clinics.

## IPE Teaching Opportunities

In the School of Medicine Transition to Residency program, third- or fourth-year dental students teach fourth-year UW medical students headed into Pediatrics and Family Medicine residencies about oral health screenings and dental caries risk assessments for infants and young children.

Third- and fourth-year dental students also assist in teaching first-year UW medical students the hands-on oral exam component of the physical exam in their Foundations of Clinical Medicine course. The session includes four representative case studies (young child, pregnant woman, adult with diabetes, and geriatric patient) along with fluoride varnish demonstration and practice application.

Additionally, a local community college dental hygiene program has been relocated to the UW School of Dentistry campus, providing the opportunity to develop intraprofessional interaction between dental and dental hygiene students in both didactic and clinical settings. Dental and dental hygiene students collaborate on patient care together, as they will when they enter clinical practice upon graduation. For example, in various clinical settings, dental students conduct dental exams during a patient's appointment with a dental hygiene student. They also rotate to the dental hygiene clinic for a team experience where they prepare the tooth for a dental restoration and the tooth is then restored by the hygiene student.

## Competency Assessments

In addition to completing individual course requirements, demonstrating competency in communicating and collaborating with other members of the health care team to facilitate the provision of health care is a key component of multiple competency assessments. The Consultation or Referral and Prescription Writing competencies specifically address the student's ability to write a consultation or referral or a prescription to a fellow health care professional, ensuring that it provides all the elements required for clear communication and effective collaboration with that professional.

## Challenges and Lessons Learned

The IPE program for health science students at the University of Washington has evolved into a robust IPE Core Curriculum and the inclusion of advanced learning outcomes through student-led community engagement projects. However, unlike the other health professions students, dental students must be supervised specifically by dental faculty if they perform any clinical skills; they cannot be supervised by members of other health professions. This can present a challenge for the involvement of dental students in some of the community engagement projects.

A little over a decade ago, when the idea of incorporating interprofessional education into the curriculum was introduced, it was challenging for the various health science schools to find time for it in their program schedules. With time and the support of the deans from all six schools, integrating IPE activities into the curriculum has become part of the culture of the School of Dentistry, and new opportunities are being sought every year.

---

## CareQuest Institute for Oral Health

CareQuest Institute for Oral Health® is a national nonprofit championing a more equitable future where every person can reach their full potential through excellent health. We do this through our work in philanthropy, analytics and data insights, health transformation, policy and advocacy, and education, as well as our leadership in dental benefits and innovation advancements. We collaborate with thought leaders, health care providers, patients, and local, state, and federal stakeholders to accelerate oral health care transformation and create a system designed for everyone. To learn more, visit [carequest.org](https://carequest.org).

This report and others are available at [carequest.org](https://carequest.org).

---