

Call for ACTion: Transforming Dental Education at the University of North Carolina at Chapel Hill

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The University of North Carolina at Chapel Hill Adams School of Dentistry is developing a transformative curriculum that prepares students to enter contemporary practice. The Advocate, Clinician, and Thinker (ACT) framework will provide the basis for developing a resilient workforce capable of meeting emerging health care needs over the next 40 years.

The landscape of health care is changing—emerging clinicians must integrate into more complex organizations, work as part of interprofessional teams, embrace elaborate technology, and access knowledge that exceeds any one individual's abilities. Health professions education is redefining its approach to preparing future leaders in health care to accommodate these needs. To prepare our workforce for a future we can only imagine, we must continue to make progress by defining new boundaries and finding comfort in ambiguity while advancing educational practices.

At the University of North Carolina at Chapel Hill (UNC) Adams School of Dentistry, we have embarked on a journey to transform dentistry for better health. We aim for our graduates to be agile health care professionals capable of high-level clinical decision-making, responsible for incorporating new technologies into patient care, and willing to embrace emerging models of health care delivery. We aim for our graduates to effectively meet changing demographics of disease and the population while operating ethically and purposefully to meet workforce needs. To inspire, educate, and train tomorrow's leaders and clinicians, we must transform our educational model and prepare our current workforce for change now and in the future. To this end, we are developing a new curriculum titled ACT—*Advocate, Clinician, and Thinker*—that develops graduates who are tenacious advocates for oral health, excel in clinical practice, and define future models of care.

Numerous academic and financial challenges exist in dental education; with multiple calls for curriculum reform emerging from health professional organizations and prominent thought leaders both within and outside dentistry [1-3].

Significant change is needed in various domains: a new mindset to share the goal of patient health and well-being, a paradigm shift where clinicians practice *with* one another not just *next* to each other, payment models to ensure value around chronic disease management and health promotion, a shared electronic health record, and better metrics to measure progress. For UNC, the timing could not be better. Our university's overarching strategic framework—the "Blueprint for Next"—promised a "new learning imperative: personalized, experiential, adaptable, and entrepreneurial" [4]; therefore, we have decided to ACT.

The ACT framework has allowed the UNC Adams School of Dentistry to reflect on our history, our progress, and our potential. We decided to move forward with an emphasis on providing person-centered care using a student-centered curriculum through faculty-centered support and innovation. Beginning in 2018, we have focused on creating a seamless experience for patients that improves outcomes, increases efficiency, and provides better care for those we serve. In working toward this goal, we are focused on optimizing student learning and organizing ourselves according to how patients move through the care continuum. In a rapidly evolving health care system with increased demands for personalized care and value, dentists must be full partners in the provision of care.

ReACTing to Workforce Needs

In preparing for the 2017 Commission on Dental Accreditation (CODA) site visit at the school, it became apparent that our current curriculum—despite possessing many strengths—required better integration between the biomedical and clinical sciences, more team-based educational experiences, and a focus on wellness to best meet the

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health care workforce needs of the future. It was at that time that a group of predoctoral program directors began crafting the vision for a new curriculum. There was an immediate need to better define not just the Carolina dental graduate of today, but also the future Carolina dentist; the goal was to envision the practitioner that would be poised to enter a workforce during a disruptive time in health care.

Concurrently, the school was developing a revitalized strategic plan. This process created another opportunity to reinvigorate our curriculum. The school's strategic plan defined a clear mission: "to transform dentistry for better health," and a vision "to become the global model for oral health education, in care and discovery" [5, 6]. Educational reform became one of three top priorities. The predoctoral group continued to work on defining the Carolina graduate, and as the strategic plan launch concluded, the group identified the ACT framework as the foundation to building the curriculum.

At that time, the academic leadership quickly discovered that launching a new curriculum would require extensive resources and guidance to ensure success. In January 2018, an Associate Dean for Educational Leadership and Innovation was identified to lead this initiative. Shortly thereafter, the Curriculum Innovation Steering Committee (CISC) was born to guide the curation process. The CISC includes a diverse faculty group from various disciplines, including members from the School of Dentistry and the School of Education, as well as the Assistant Provost for Interprofessional Education and Practice at UNC. The vision was to promote collaboration across the health professions and engage educational experts to ensure the new curriculum would integrate evidence-based and innovative techniques. Moreover, the CISC aimed to outline and document the process as it unfolded to support other schools interested in substantial curricular revisions.

At this point, the framework only included the overall characteristics of the Carolina graduate: advocate, clinician, and thinker. Creating the curriculum itself was going to be a substantial undertaking—a four-phase process was outlined to include a(n): 1) needs assessment and planning phase, 2) design and development phase, 3) implementation phase, and 4) evaluation phase [7]. Each phase was mapped to ensure implementation of the new curriculum would begin in summer 2021.

EnACTing the ACT Curriculum

In the spring of 2018, the effort to craft and develop a new curriculum officially launched. The first step—needs assessment and planning—was critical. This was the initial opportunity to connect with faculty and was crucial to establishing a sense of urgency and obtaining engagement for the remainder of the process [8]. A communications plan with the inclusion of multiple stakeholders was established. The plan included the development of a Curriculum Innovation Advisory Board with participants from the School

of Dentistry, faculty from other UNC schools, members of the North Carolina Dental Society, and the BlueCross and BlueShield of North Carolina Foundation. In addition, a Young Alumni Team was created with graduates from the past three years to garner their perspective as emerging practitioners; these individuals had valuable insights about deficiencies in their training that became apparent as they entered the workforce.

To promote a culture of change and support, the school engaged faculty through quarterly half-day summits at which the CISC shared updates on the development process. Summits also offered an opportunity to solicit faculty feedback through recorded focus groups evaluated by qualitative researchers from the UNC School of Public Health. Three faculty senate votes have occurred, giving the CISC permission to begin curricular innovation, affirming the conceptual vision of the future Carolina graduate, and supporting the ACT framework design. Students and staff were also encouraged to provide feedback through quarterly town halls. Engagement on all these levels was critical to creating a shared vision for the curriculum and a unified approach by faculty, staff, and students.

The second phase—design and development—has required substantial resources and effort. Throughout the process, it has been crucial to maintain focus on the primary goals of the strategic plan. To craft a curriculum that holds true to these aspirations, the CISC began by developing guiding principles that would inform curriculum development and contribute to the defining elements of the curriculum at all stages, as outlined in Table 1. With the collaboration of the UNC Kenan-Flagler School of Business, the CISC also compiled and evaluated information about other innovative curricula from 15 national and international dental schools, six medical schools, and two pharmacy schools.

TABLE 1.
Guiding principles and defining elements of the ACT curriculum at the UNC Adams School of Dentistry

	Description
Guiding Principles	<ul style="list-style-type: none"> • Integrated, clinically driven curriculum • Patient-focused, team-based care • Student-centered education • Wellness for patients, students, staff, and faculty • Outcomes-based gateway systems
Defining Elements	<ul style="list-style-type: none"> • Establish a growth mindset culture in teaching and learning • Integrate biomedical and clinical sciences • Complete principal didactic learning in first 20 months • Establish a residency-style clinical education model that mirrors future clinical practice • Prioritize interprofessional education and integrate the dental hygiene curriculum • Personalize the educational experience

Source: UNC Curriculum Innovation Steering Committee (CISC).

A host of outcome statements that articulated what it means to be an advocate, clinician, and thinker were mapped to the Commission on Dental Accreditation standards (see Figure 1). We used a reverse-engineering design approach [9] to add substance to the outlined ACT framework and began by identifying the knowledge, skills, and attitudes that would serve as evidence to support competency in the three domains [10]. In addition, the CISC crafted a series of outcomes outlining how a student would be

expected to progress through the curriculum and the expectations for their performance as it relates to the three ACT competency domains. From this, various themes emerged, namely: professionalism and ethics, interprofessional collaboration, decision-making, and communication, all of which were considered in the context of various lenses ranging from the human sciences to population health as shown in Figure 2.

The design and development phase thus far has resulted in the creation of an ACT curriculum model. This model consists of four phases:

- *Basecamp* (four to six weeks in duration beginning July of the first year): provides an opportunity to calibrate students' biomedical science knowledge; establishes foundational expectations of students as learners and professionals; identifies students' abilities and needs early in the curriculum.
- *Foundations of Practice* (20 months in duration following basecamp): focuses on integrating biomedical and clinical sciences in an oral-health-relevant context; organizes learning in blocks of varying duration rather than in discipline-driven courses while immersing students in clinical experiences early in their education; and assesses students in ways that ensure only those students ready for advancement proceed.
- *Guided and Advanced Clinical Practice* (24 months in duration): incorporates a group practice model with faculty teams that mirror future clinical practice and establishes clinically relevant learning experiences that fully integrate interprofessional education and include dental hygiene in all components where applicable.
- *Individualization* (dispersed across the four years): allows students to personalize their experience or remediate to standards as needed; offers unique electives, certificate programs, and masters and doctoral degrees across campus, including a rural track to address workforce needs in rural regions of North Carolina.

Currently, the CISC is working to develop additional details about curriculum structure, objectives, learning activities, and assessments by collaborating with faculty, students, staff, and alumni. A fully integrated dental and dental hygiene curriculum is planned to be included in this process.

ACTualizing the ACT Curriculum

The next phases—implementation and evaluation—remain. Actualizing the ACT framework requires a culture shift. Efforts to ascertain these changes include a series of essential initiatives. First, the UNC Adams School of Dentistry is in the process of a departmental re-organization aimed at establishing multidisciplinary units that promote more operational efficiencies, less silos, and better integrated care. Second, promotion and tenure guidelines that intentionally value teaching and interprofessional collaboration must be developed. More broadly, a campus-wide

FIGURE 1.
Key Features of the Proposed New ACT Curriculum of the UNC Adams School of Dentistry

ADVOCATE

We promote the dignity of all

- We apply the principles of professionalism and ethics
- We care for diverse patient populations
- We communicate and act compassionately

We serve those in need

- We care for our communities
- We promote oral and systemic health
- We foster a culture of giving

We lead our communities

- We influence and embrace change
- We cultivate cooperation and partnership to achieve our goals
- We engage with our professional organizations

CLINICIAN

We care for each patient as a person

- We prioritize patients' needs in providing person-centered care
- We promote comprehensive care
- We provide care across all stages of life
- We communicate in an effective and professional manner

We promote wellness and better health

- We collaborate across professions to provide team-based care
- We apply the principles of wellness and prevention in clinical practice
- We understand the importance of wellness in our own lives to best care for others

We practice at the top of our profession

- We demonstrate ethical practice and competent technical skills
- We integrate contemporary technologies and techniques into our practice
- We continually improve the quality of our practices and care
- We understand the limits of our abilities

THINKER

We seek the best solutions

- We systematically gather and integrate data into our patient care
- We integrate biomedical sciences in our practice
- We apply critical thinking in our treatment approaches

We discover and integrate new knowledge

- We value the contributions of research to our profession
- We assess and integrate contemporary knowledge into evidence-based practice
- We embrace a creative and entrepreneurial mindset

We learn lifelong

- We are prepared to function in a changing health care environment
- We demonstrate self-awareness
- We pursue self-directed professional development

Source. UNC Adams School of Dentistry.

FIGURE 2.
ACT Curriculum Framework



Source: UNC Adams School of Dentistry.

initiative to address how best to capture interprofessional activities in curricula vitae is in place. Third, planning for an integrated new electronic patient record has begun, with the full implementation set to take place in 2020. Fourth, the CISC is developing phase one of a resource allocation study to begin identifying needs that will allow us to realize the new model. Fifth, data management systems have been put in place to centralize curriculum efforts and tracking. Finally, we are moving beyond patient-centered care to include a student-, staff-, and faculty-centered workplace. For example, the School of Dentistry now has a Director of Student Wellness to provide one-on-one wellness coaching and counseling services to students. And for faculty, an Academic Support Center was formed to focus on teaching and learning innovation, centralize and curate the curriculum, and foster educational research.

Conclusion

When considering how best to prepare the workforce of the future, advancing health care education is a crucial component—with oral health being no exception. Much like practice models are evolving, educational systems must also be agile to be patient-, student-, and faculty-centered. Curricular changes can drive reforms in dental practice and address future workforce needs in North Carolina and beyond. Now is the opportunity for the dental community to revitalize and reimagine a health care workforce prepared to address emerging needs with an innovative vigor, a tailored skill set, and an immense potential. *NCMJ*

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