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Changing the Education Paradigm in Pediatric Dentistry

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ABSTRACT Traditional curricula of pediatric dental residency programs have overemphasized restorative dentistry while failing to give adequate attention to early diagnosis, preventive disease management, risk assessment, cultural competency, advocacy, community partnerships and interprofessional education. The University of California, Los Angeles, Community Health and Advocacy Training Program in Pediatric Dentistry emphasizes these lesser-taught areas, integrating them within a structured education in classical restorative techniques and Commission on Dental Accreditation-approved standards, providing a diverse curriculum and preparing residents for practice in increasingly diverse communities.

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Historically, the curriculum and clinical experience in a pediatric dentistry residency program have focused on training dentists in behavioral management and invasive restorative and surgical care. While proficiency in restorative care is a critical component of dental care, training in preventive care and disease management is often not given adequate emphasis. The University of California, Los Angeles, Community Health and Advocacy Training Program in Pediatric Dentistry (CHAT-PD) aims to equip residents with the tools to improve and promote children's dental health and development, within the context of family and community.[1] Additionally, CHAT-PD emphasizes interprofessional education and collaboration as a means of integrating oral and general health using a multidisciplinary approach.

The program includes innovative components based on the Maternal and Child Health Bureau life course theory model[2] to ensure sufficient training in the provision of comprehensive oral health care to infants and children, and also offers supplemental integrated didactic coursework emphasizing individual, family, community and system-based approaches. These components, along with applied learning experiences and policy and advocacy opportunities, encourage holistic treatment of the patient, within the context of regional and demographic influences.

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Enhancing and Transforming the Pediatric Oral Health Curriculum

The reformed CHAT-PD program at UCLA has evolved over several years and now contains eight primary didactic modules or functional areas. These include:

- Disease management and risk assessment;
- Interprofessional education and training;
- Quality improvement;
- Cultural competency;
- Ethics and professionalism;
- Community partners and oral health systems of care;
- Policy and advocacy; and
- Statistics and research methods.

Disease management and risk assessment stresses the importance of early assessment, diagnosis and intervention as a means of oral disease prevention management. Residents learn a dual participatory/"pair" approach to treatment of women during pregnancy, providing a unique opportunity to engage the parent and thus impact the future oral health of the mother-infant unit and the larger family as a whole. A background in early and minimally invasive pediatric dentistry and individual, patient-centered oral health assessment is provided, featuring the Caries Management by Risk Assessment (CAMBRA) tool.[3] The three key domains are risk/biological factors, protective factors and clinical findings to help assess the child at a specific moment in time based on the specific age, risk, ethnicity and region of residence. Also covered is the overall assessment of other influential factors, such as genetics, health behaviors, social norms and public policy. These establish a basis for determination of appropriate individual interventions, focusing on the child and the caregiver in dual parallel tracks, encouraging behavioral changes at home by the mother/caregiver to minimize risk and maximize prevention for the child at an early age.

Interprofessional education (IPE) and training provides CHAT-PD residents with the tools to cross-train nondental providers, such as physicians, pediatricians and nurses, on oral health disparities and dental development, as well as risk assessment, anticipatory guidance and even the application of fluoride varnish. Residents participate in academic and clinical activities alongside nondental providers, learning about the highly relevant interplay between oral and systemic health across the lifespan, as well as how to recognize the oral manifestations of systemic disease. Special emphasis is placed on prevention strategies and early recognition of/interventions for early childhood caries (ECC), following the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry (AAPD) recommendations of the "age 1 visit."[4] In addition to key IPE collaborations with pediatrics and nursing, CHAT-PD offers residents the opportunity to concurrently earn a Master of Public Health degree. Longer-range plans for the program include expansion to other educational tracks, including general dentistry and other areas of medicine.

A background in early and minimally invasive pediatric dentistry and individual, patient-centered oral health assessment is provided.

Quality improvement addresses the use of quantitative and qualitative methods to enhance the resident's ability to continuously improve the efficiency, effectiveness and delivery of oral health care services and of pediatric patient groups, particularly those belonging to vulnerable or underserved populations. The incorporation of quality improvement outcome measures allows comprehensive evaluation of the mouth and the child as a "whole" entity, rather than just tooth surfaces or dental structures. The importance of willingness to promote change in oral health care delivery processes, in order to achieve better results, is highlighted and the rationale of quality improvement as a means to improved access and quality of care is discussed.

In cultural competency, residents learn the importance of providing culturally and linguistically appropriate oral health care, while considering the impact of culture on attitudes, behavior and oral health. Among health care professionals, lack of cultural competency, including biases, judgment, uncertainty and poor cross-cultural communication, contribute to disparities in quality of treatment and, ultimately, in patient outcomes.[5-7] Thus, the existing lack of diversity[8,9] among dental professionals providing care to high-risk populations likely contributes to the increased rates of dental disease in these communities. This course provides residents with essential tools to identify and address health care disparities and barriers to oral health care access, while developing a greater understanding of how to interact with a wide range of diverse ethnic groups.

Ethics and professionalism highlights the professional role of the dentist while using case studies to illustrate principles of clinical and research-based dental ethics. The course emphasizes the importance of placing the patient's best interests ahead of financial incentives or research considerations, encouraging preventive

strategies aimed at reducing oral disease and improving quality of care, while discouraging those that merely maximize compensation. Course participants are instructed to always consider the best option for the patient, as if he or she were the participant's own child.

The systems-based course, community partners and oral health systems of care, provides residents with a foundation for improving pediatric oral health within the context of their own community. The role of the oral health care delivery system is examined in relation to regional community early education programs and clinics, public- and private-sector payers and policymakers. The course covers topics such as the social determinants of health and the problem of access to care. It includes site visits and involvement with community partner clinics, as well as an introduction to key players such as day care providers, Women, Infants, and Children (WIC) and Early Head Start (EHS).

Policy and advocacy introduces local, state and federal legislative processes and advocacy strategies, providing residents with the tools needed to promote oral health agendas in a governmental forum. At the end of their didactic course on advocacy, residents travel to Washington, D.C., to participate in advocacy activities organized by the AAPD, attending meetings with legislative members and staff to learn and understand advocacy efforts for improved access to high-quality children's oral health care, particularly among vulnerable populations. Residents also participate in the National Oral Health Conference (NOHC) each year to observe directly the collaboration between dental public health professionals and pediatric dentists. The conference brings together advocates and practitioners who present innovative models of community dentistry among many other innovative intervention topic areas.

Statistics and research methods is an updated, modernized course that incorporates dental public health principles along with more traditional aspects of research design and statistics. Residents participate in a research project of their choosing, giving them the chance to expand on topics covered in their coursework, clinical training or applied learning experiences. While residents have the option to focus on more traditional clinical research, they are encouraged to consider more culturally or community-oriented research projects.

Course participants are instructed to always consider the best option for the patient, as if he or she were the participant's own child.

Applying CHAT-PD Didactics to Clinical Services

The CHAT-PD residency program creates an opportunity for residents to apply and practice their didactic training in a community setting. At the Venice Family Clinic/Simms Mann Health and Wellness Center, the residency program coordinates a unique infant oral care program (IOCP). IOCP offers a clinical rotation for residents within a community clinic.[10] The program is co-located with the clinic's pediatricians, offering dental and pediatric residents an opportunity to practice in an interprofessional setting.

The required IOCP rotation is an example of the "service-learning" approach, in which students actively participate in the activity about which they are learning, while at the same time benefitting the community. Such rotations, which are required for advanced specialty programs in pediatric dentistry,[11] allow residents to apply their didactic knowledge and integrate it into their daily clinical care, while increasing their exposure to low-income and vulnerable populations and promoting civic engagement and social responsibility.[12]

Spreading the Model in Residency Programs

In order to strengthen its pediatric dental instruction component, we incorporated segments of CHAT-PD into the Advanced Education in General Dentistry (AEGD), another residency program within UCLA's School of Dentistry. In the past year, we developed a curriculum for the AEGD program in pediatric oral health. The courses were delivered to AEG D residents along with an optional clinical rotation in the IOCP program. In the future, we intend to adapt the curriculum for the General Practice Residency (GPR) program and the Predoctoral Dental school program.

Online Education Platform

In 2012, the residency program began the development of an online learning platform. In collaboration with faculty, lectures were recorded and content developed. CHAT-PD's online platform was launched and hosts all eight CHAT-PD modules, including lectures, syllabi, course materials, evaluations and other related content. The platform also serves as an archive of guest lectures and as a resource for program alumni, providing access to short faculty lectures on a variety of topics. Access to CHAT-PD's online platform is currently restricted to UCLA faculty, residents and alumni until platform development is complete and copyright protections are in place.

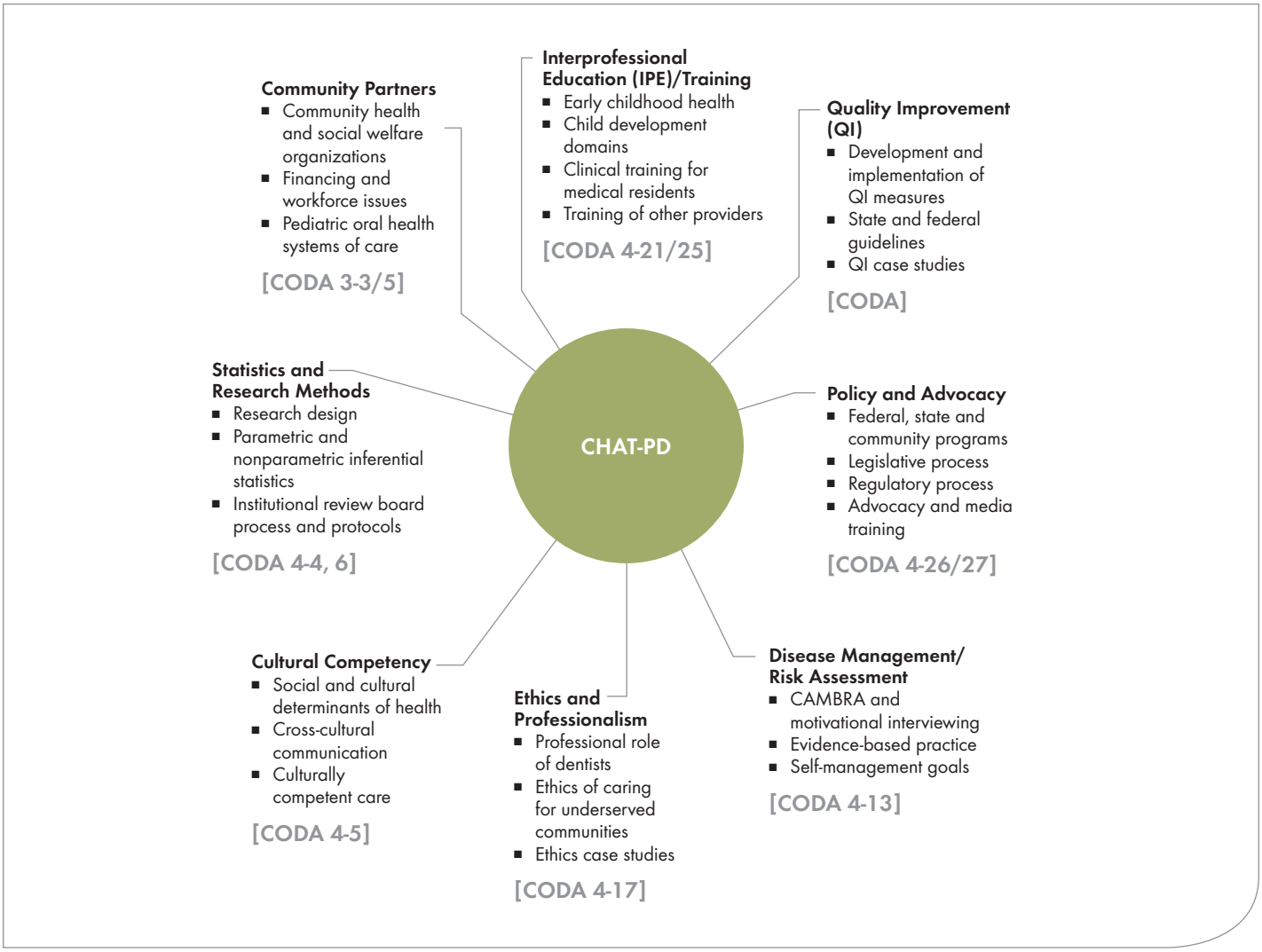

FIGURE. CHAT-PD academic courses and CODA standards.[1]

Evaluating Program Implementation

An essential part of any program that aims to change the paradigm is continual measurement and evaluation of the achievement of its goals. In 2013, we implemented a process to evaluate the use of the disease management and risk assessment didactic tools within our Westwood Children's Dental Center. Through the clinic's electronic health system, which was configured to include CAMBRA and self-management goals (SMG) forms, we collected data regarding the utilization of these forms. We observed a varying percentage of use among residents. We held a session with the residents to understand the rationale and learned of a few ways to increase CAMBRA/SMG usage. This process continues with our CHAT-PD modules as we focus on utilization of CHAT-PD didactic.

Discussion

The 2003 IOM report, *Health Professions Education: A Bridge to Quality*, recommended a strong effort to promote interprofessional education: "All health professionals should be educated to deliver patient-centered care as members of an interprofessional team, emphasizing evidence-based practice, quality improvement approaches and informatics."[13] The Commission on Dental Accreditation (CODA) has incorporated these recommendations, updating accreditation standards for advanced specialty education programs in pediatric dentistry.[11] All CHAT-PD courses align with CODA standards as depicted in the **FIGURE**.

With the implementation of the Affordable Care Act (ACA), we have acknowledged that health care for children is a fundamental societal right.

The ACA further defines 10 categories of essential health benefits,[14] including pediatric dental service.[15] The following questions arise: Will we see an influx of patients with severe disease who have not had access to dental services before, and how do we begin to treat this population? The new generation of pediatric dentists must recognize that one of the greatest methods of reducing the burden of disease is through prevention and early intervention and that in cases where treatment is required, noninvasive dentistry must be considered first, along with modified health behavior as a phased approach before beginning aggressive restorative treatment.

Changing the paradigm will require time, a serious long-term commitment on the part of medical and dental education institutions and a change in the way we reimburse for dental services. The synergy resulting from successful collaborations between dental and nondental health care providers in a primary care setting will aid in the successful implementation of disease prevention strategies and early detection and treatment of oral disease. As providers and educators, we must advocate for these changes as fundamental rights to quality health services for children's oral health. ■

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