

Review Article

Clinical Dental Assistants are Crucial Bedrock Team Members in the Academic Clinical Dental Milieu during the COVID-19 Pandemic

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Abstract

The COVID-19 Pandemic forced immediate changes in how dental academicians must teach dental student doctors' hands-on acquisition of Dental Auxiliary Utilization (DAU) principles. The Clinical Dental Assistants' (CDAs) presence was reduced drastically in their clinical access during patient care in the distal part of the Spring Semester 2020 and the early months of the Fall Semester of 2020. The substantive and necessary limitations for safety in the academic setting and societal dental health care needs have reduced student doctors' opportunities to utilize clinical dental assistants (CDAs) for DAU. CDAs' value in an academic dental care milieu is paramount to student doctors' successful transition from the preclinical to clinical and ultimately transition to private clinical practices.

Keywords: Clinical dental assistants; COVID-19 pandemic; Dental clinical care; Workforce; Intra-professional education

Intra-professional Dental Assistants

The COVID-19 Pandemic forced immediate changes in the way dental academicians had to teach Student Doctors' (SDs) hands-on acquisition of the principles of Dental Auxiliary Utilization (DAU) (Table 1) to Undergraduates in General and Prosthodontic Clinics [1-5]. Student Doctors' temporary suspension in the direct patient care occurred during the Spring Semester of 2020 at all dental schools and colleges in the United States. Our Institution's re-opening occurred with many substantive restrictions in the facility's daily operations, which affected didactical courses (lecture and preclinical) and patients' clinical care. The lecture courses were moved to

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online synchronous and asynchronous formats. The Clinical Dental Assistants (CDAs) were needed to assess and monitor employees (faculty and staff), students (hygienists and dentists), the Emergency Clinic (EC), patients' temperatures at two (2) entry locations, and other delegated responsibilities. The need for CDAs in the clinical setting's daily operation is paramount to the efficient and practical functions of the academic groups' dental office format [6-8].

CDAs are needed in the academic setting to prepare student dental doctors for an easy transition to the private clinical practice setting. CDAs are responsible for numerous activities in the daily practice operation for the dentists. CDAs provide preparative and authentic roles in teaching SDs the concepts (not all-inclusive)

Table 1: Dental Assisting Principles Skill Set for Teaching Future Clinicians in an Academic Milieu.

Skill-Set	Explanation
Terminology	<ul style="list-style-type: none"> • Application • Relationship of terms • Ethics • Laws • Rules
Clinical Collaboration	<ul style="list-style-type: none"> • 4- and 6-Handed Dentistry • Dental Armamentarium/Tray Arrangement Management -Set-up to Dismantle • Patient Data and Business Management
Clinical and Laboratory Techniques	<ul style="list-style-type: none"> • Infection Control • Armamentarium Differentiation • Procedural Differentiation • Head and Neck Anatomy • Dentition Anatomy • Patient Data Collection • Dental Laboratory Procedures, Materials, and Armamentarium Utilization
Clinical and Technique Radiography	<ul style="list-style-type: none"> • Radiographic Patient Management • Radiographic Scientific Principles • Radiation Safety and Effects • Radiographic properties • Radiographic machine and operation • Digital Imaging • Radiographic Films and Processing

The skills-set for clinical dental assistants is essential to the daily needs of clinical dental groups/practices.

Table 2: Observation Form.

Observation in Education and Training of Student Dental Doctors in
 Dental Auxiliary Utilization for Dental Practice and Infection-Control Program
 Student Name: _____ CDA: _____

Program Element	Evaluation Activity		
	Y	N	NA
Patient-Care Items and Post Patient-Care Compliance and Adherence			
Ergonomics During Restorative Patient Care			
Professionalism Toward CDAs			
4- and 6-Handed Dentistry			
<u>Sterilization and Disinfection</u>			
• Dental Instruments: Handpieces, Burs, Tray Set-up Equipment...			
<u>Barrier Protection</u>			
• <i>Dental Instruments and Equipment:</i> Handpieces, Handpiece Holders, Air/Water Syringe			
• <i>Dental Furniture:</i> PDC, Dentist and CDAs' Chairs, Overhead Light Handles			
• <i>Electronic Devices:</i> dental chairside computer, Cerec/CAD-CAM			
<u>Patient Care and Transporting and Processing Contaminated Objects</u>			
• <i>Patient</i> Properly Protected (eyewear, apparel, radiographs)			
• <i>DCHP</i> needle capping protocol followed			
• <i>Hand Hygiene</i> adherence before, during, and after the patient			
• <i>Personal Protective Equipment</i> is worn appropriately (hair, eyes, hands, body protection)			
• <i>Impressions</i> handled properly			
• <i>Instrument processing preparation followed for sterilization method:</i> correct cleaning, packaging into cassettes			
<u>Clinical Contact and House Keeping Surfaces for Environmental Infection Control</u>			
• <i>Proper Utilization</i> of Cubicles, Support Labs, and Radiography Rooms Cleaned and Disinfected			
• <i>Housekeeping Surfaces Proper Utilization</i> of Clinics, Support Labs, and Radiography Rooms: switches, cabinet manipulation, sink countertops, spray bottles, alcohol 2by2cotton gauze container, reusable containers of dental materials (e.g., removal of alcohol-soaked 2by2 cotton gauze for clinical use), drawer handles, countertops, pens, telephones			
• <i>Cleaning floors, walls, and sinks for sanitation and disinfection</i>			
• Cleaning and Disinfection Strategies for Blood Spills followed			
• Dental Unit Waterlines, Biofilm, and Water Quality protocols followed			
<u>Preparation, Delivery, and Storage of Dental Instruments</u>			
• Preparation and Packaging			
• Instrument Processing Area at the Dispensary			
• Receiving and Storage of Sterilized Cassettes			
<u>Comments:</u>			

PDC: Patient Dental Chair, CDAs: Clinical Dental Assistants, DCHP: Dental Care Health Professional
 Created from the CDC 2003 MMWR Health-Care Settings Guidelines
 Centers for Disease Control and Prevention. Guidelines for Infection Control in Dental Health-Care Settings-2003. MMWR 2003; 52 (No. RR-17): [inclusive page numbers].

"This [MMWR 2003] report consolidates previous recommendations and adds new ones for infection control in dental settings. Recommendations are provided regarding 1) educating and protecting dental health-care personnel; 2) preventing transmission of bloodborne pathogens; 3) hand hygiene; 4) personal protective equipment; 5) contact dermatitis and latex hypersensitivity; 6) sterilization and disinfection of patient-care items; 7) environmental infection control; 8) dental unit waterlines, biofilm, and water quality; and 9) special considerations (e.g., dental handpieces and other devices, radiology, parenteral medications, oral surgical procedures, and dental laboratories). These recommendations were developed in collaboration with and after review by authorities on infection control from CDC and other public agencies, academia, and private and professional organizations."

of (1) four- and six-handed dentistry, (2) infection control, (3) Occupation Safety and Health Administration (OSHA) mandates *via* office protocols and updates, and (4) ergonomics [9]. These concepts are highlighted in teaching Third Year and Fourth Year SDs introduction to the pertinent lexicons and protocols during their patients' care (Table 2). These concepts and practices are crucial to the informational learning continuum-novice, advanced beginner, competent, proficient, and expert of student doctors as they transition from the preclinical laboratory (e.g., first- and second-year dental students) settings to their clinical dental settings (e.g., third- and fourth-year dental students) [10]. The importance of CDAs to the academic dental environment became self-evident because of the COVID-19 Pandemic. Our Institution persevered for our students to obtain promotion and graduation as the Spring Semester of 2020 arrived at its finale.

The drastic reduction of the CDAs' presence in the clinical access for patient care support in the Fall Semester of 2020 limited SDs' opportunities to implement relationship building for team patient care management. CDAs has continuously provided four- and six-handed dentistry practice experiences and guidance for the SDs' transition from preclinical to clinical courses. Additionally, real-time implementation of Occupational Safety and Health Administration's (OSHA) infection control mandates and the shortage of Personal Protective Equipment (PPE) became problematic since the coronavirus's nanoscopic invasion in humans [9]. Previously, the SDs would be evaluated and guided by their attending CDAs for appropriate practice and protocol executions during their patients' clinical care in the College of Dentistry's (CoD) private practice-type clinical model called the Group Leader Program. The handicap of working on a manikin when returning placed a different type of

duty on the CDA. As patients were allowed to return to the clinic after significant facility safety changes slowly, the CDAs' earlier responsibilities resumed at the patients' chairside. Unlike the private sector, the CoD was able to retain CDA's during the COVID-19 Pandemic without furloughs. The authors are writing this article to highlight the importance of CDAs' presence in dentistry, which the Dale Foundation has acknowledged [11]. CDAs are quintessential dental health care professionals.

Strategy and Implementation to Address the COVID-19 Challenges

After the State's Governmental Officials allowed health care professionals to return to patient care, CDAs were not available for all group practices due to their presence for monitoring employees and patients' temperatures at entry locations and in the EC. The Chair permitted the course director permission to revise the asynchronous courses' syllabi to lessen the SDs' academic burden for obtaining the designated clinical experiences with CDAs. The syllabi would include Gordon J. Christensen Practical School Streaming-Practical Clinical Courses(r) clinical courses, such as COVID-19, Infection control, 4- and 6-handed dentistry, and ergonomics (Table 3) [12]. The syllabi were within one day of submission to SDs when the Dean increased students' clinical attendance, and CDAs returned to the clinics. The existing asynchronous syllabi remained unchanged, and SDs returned to seeking clinical experiences with CDAs. The Senior SDs' clinical experiences with CDAs gradually stabilized. Still, the Junior SDs' transition from preclinical to clinical courses followed previous years of lessened clinical experiences initially but would increase during the Fall Semester of 2020. With the pandemic's added weight, they did not increase in the chairside use of CDAs.

As the Fall Semester progressed, the Junior SDs—appeared to be on schedule. Moving forward, CoD prepares for the Semesters of 2021 and 2022. The course directors will revise their syllabi to reflect preclinical courses (e.g., Junior's Lecture Dental Auxiliary Utilization) and clinical courses with a flexible mindset to meet the patients and SDs' needs. In the Spring Semester of 2022, the D2 SDs in their "Introduction to Clinical Practice" course will experience training with CDAs to imbed this exercise's importance *via* the titled "The Value of Dental Assistants to the Dental Practice" [11]. Will the COVID-19 Pandemic be the impetus to affect retaining veteran CDAs? The CDA's with 20-30 years of experience may leave dentistry in the wake of the pandemic and fear of the coronavirus. As support and expectation meet head-on, intra-professional collaboration with Dental Assisting Schools (DASs) and our SDs perform their chairside skill sets, such as 4- and 6-handed dentistry [13]. Looking to the future beyond the COVID-19 Pandemic is a must, even as we strategize to be creative in teaching, learning, and constantly prepare for opportunities to utilize CDAs in a safe environment. The importance of the CDAs is embedded into the SDs' early training for transition to the clinical setting.

Remaining Flexible During the Challenges of COVID-19 Pandemic

Spring Semester 2021 for Junior and Senior course syllabi were revised to include four (4) streaming videos from PCC with accompanied vetted tests. These tests were included to encourage our

Table 3: Practice Clinical Course.

Course*	Format	Course Name
V2407	Streaming	Preparing for your return to dental practice in the COVID-19
V2452	Streaming	Infection control for every dental practice
V4714	Streaming	Effective use of four-handed & six-handed dentistry
V4776	Streaming	Ergonomics – Reduce or eliminate pain from your practice

*PCC/<https://www.pccdental.com/ce-tests.php> and videos used in the asynchronous course for dental students.

SDs to retain the information for use during patient care. Additionally, each video with test had accompanied PDF(s) as a foundation for review before entering the clinics for patient care with the CDAs. The SDs had to obtain a score of 80/100 with multiple attempts (four). To improve relationship building between the CDAs and SDs, the authors have developed an interprofessional collaboration with The Learning Center (TLC) for an asynchronous online course to teach the CDAs how to perform evaluation and assessment (with potential for continuing education credit) of SDs during the clinical care of patients. Lastly, simulation exercises are in the dental team's creative phase to emphasize CDAs in teaching SDs for clinical care, graduation, and transitioning to their private clinical practices. Flexibility is the key as academic health care settings address the challenges with COVID-19 and the seasonal inclement weather (e.g., February 2021). CDAs' presence in the clinics became paramount to the promotion and graduation of SDs for their education continuity, particularly as the Seniors prepare to transition from the academic milieu to their private clinical practices. The CDAs' continual presence as a crucial member of the dental team has been amplified as the academic milieu's bedrock of the health care professional team [6-8].

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