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COVID-19

Adapting to Change: Georgia School of Orthodontics' Response to COVID-19

By Ricky E. Harrell, DMD, MA, Tammy Cagle, EdD, MBA, Randy Kluender, DDS, MS, Carla Nunez, DMD, Gabriela Herrera, DMD, MS, Joe Asercion, DDS, MS, Noam Green, DMD, MS, Sergio Real, DMD, MS, Howell Lewis, DMD and John W. Stockstill, DDS, MS On **Aug 23, 2020**  0

The following clinical model was developed in response to the local and global effects of the COVID-19 pandemic on orthodontic residency education. Specifically, this model was created in anticipation of a significant interruption in the clinical and educational mission of the Georgia School of Orthodontics (GSO). A proactively generated plan was implemented that has allowed the didactic, clinical, and research components of the program to be operated with minimal interruption. The following description is offered as a functional substitute for orthodontic residency programs to be used during the current (and any future) disruption.

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Didactic Modifications

The anticipated spring and summer 2020 didactic curricula for PGY1, PGY2, and PGY3 residency classes at GSO consisted of 256 total contact hours. This curriculum was designed in such a way that the didactic courses would be offered in a classroom setting with regularly scheduled lectures given by GSO faculty and resident presentations as assigned. This schedule was followed without interruption until March 23, 2022, when most orthodontic residency programs in the United States were closed due to the pandemic. Once this disruption occurred, an immediate contingency plan was implemented by the faculty and administration in order to facilitate any emergency patient assistance needed, and to seamlessly continue the didactic responsibility of the program for all three classes without interruption. This transition from a traditional classroom didactic schedule to that of a “virtual classroom” schedule was designed to “front load” all of the didactic coursework originally scheduled for the spring and summer semesters. Residents and participating faculty were able to access the scheduled coursework and participate in the virtual classroom by utilizing RingCentral, a meeting platform routinely used for teleconferencing and virtual presentations. The lectures and presentations were arranged and administered by Tammy Cagle, EdD, MBA, GSO’s research coordinator and orthodontic residency program coordinator with assistance from Aaron Van Wormer, GSO’s director of internet technology.

All weekly schedules were created and dispensed at least 7 weekdays in advance, and an “invitation to participate” was sent out by Cagle to all pertinent lecturing faculty and residents. This invitation was used to provide all recipients with a starting time for specific lectures and acted as a reminder for that week’s didactic schedule. This RingCentral system enabled all users to visually see the PowerPoint lecture being given and allowed the residents and faculty to verbally respond to the lectures as needed or desired. As configured, the system did not require the residents or faculty to be in one physical location, such as the classroom, but did allow for everyone participating to be completely involved in the lecture within their own living area (within or outside of the US, depending on the location of the participant).

Each didactic course scheduled for the spring and summer semesters consisted of a predetermined number of contact hours with each contact hour representing a percentage of time needed to satisfy the curriculum requirements (Table 1). That is, for a 1-hour credit course, 15 contact hours would be needed to satisfy the semester requirements of 1 credit (15 contact periods = 1 credit hour).

Table 1. Sample Didactic Course Schedules

Ricky Harrell, DMD, MA

Course Load Spring Semester 2020 Pre- and Post-COVID Adjustments

Course	Hours Scheduled	Delivered	Surplus/Deficit
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Biomechanics of TADS	14 (8 Pre/6 Post)	23 (8 Pre/15 Post)	+ 9 hours
Diode Laser Practical Training	2 (2 Pre)	2 (Pre)	0
Diagnosis and Treatment Planning	30 (11 Pre/ 19 Post)	42 (11 Pre/ 31 Post)	+12 hours
Age Appropriate Orthodontics	32 (21 Pre/11 Post)	47 (21 Pre/26 Post)	+15 hours
Problems in Orthodontics	15 (6 Pre/9 Post)	7 (All Pre)	-8 hours
Pedagogy	3 (All Pre)	3 (All Pre)	0
MB Edgewise Philosophy	15 (8 Pre/7 Post)	19 (8 Pre/11 Post)	+4 hours
Oral Surgery Grand Rounds Lectures	8 (4 Pre/4 Post)	8 (4 Pre/4 Post)	0
Total	119		+32 hours

Not Scheduled Harrell Courses

Practice Management	0	13 (All Post)	+13 hours
Retention and Stability	0	9 (All Post)	+9 hours

Note: An additional 54 hours of course content (Webinar presentations, American Association of Orthodontists archived lectures, etc) was delivered during this schedule disruption.

John W. Stockstill, DDS, MS

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Course	Hours Scheduled	Delivered	Surplus/Deficit
Temporomandibular Disorder/Orofacial Pain 221 (Spring)	15 (11 Pre- and 4 Post-)	15	0
Growth and Development 121(Spring)	15 (11 Pre- and 4 Post-)	15	0
History of Orthodontics 131 (Summer)	15 (15 Post-COVID Adjustment)	15	0
History and Variations of Edgewise Appliance Systems 131 (Summer)	15 (15 Post-COVID Adjustment)	15	0
TOTAL	60	60	0

Gabriela Herrera, DMD, MS

Course Load Spring Semester 2020 Pre- and Post-COVID Adjustments

Course	Hours Scheduled	Delivered	Surplus/Deficit
Current Literature Review 121	15 (11 Pre- and 4 Post-)	15	0
Oral Surgery Compensation 131	2 hours Post-COVID	2	0
TOTAL	17	17	0

Sergio Real, DDS, and Carla Nunez, DMD

Course Load Spring Semester 2020 Pre- and Post-COVID Adjustments

Course	Hours Scheduled	Delivered	Surplus/Deficit

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Age Appropriate Early Treatment 132	15 (11 Pre- and 4 Post-)	15	0
TOTAL	15	15	0

Noam Green, DMD, MS

Course Load Spring Semester 2020 Pre- and Post-COVID Adjustments

Course	Hours Scheduled	Delivered	Surplus/Deficit
Contemporary Orthodontic 121 and 131	15 (11 Pre- and 4 Post-)	15	0
TOTAL	15	15	0

Howell Lewis, DMD

Course Load Spring Semester 2020 Pre- and Post-COVID Adjustments

Course	Hours Scheduled	Delivered	Surplus/Deficit
American Board of Orthodontics (ABO) Board Exam Review 221	15 (All Post-COVID 19 due to ABO Exam being delayed to June 5)	15	0
TOTAL	15	15	0

Clinical Faculty: Joe Asercion, DDS, MS

Course	Hours Scheduled	Delivered	Surplus/Deficit
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Treatment Planning 111 and 133 (Virtual contact and clinical contact opportunities)	15+ (Post-COVID 19 Summer)	15+	15+ Surplus
TOTAL	15+	15+	15+ Surplus

Clinical Modifications

With an interruption in clinical contact time due to the abrupt shutdown of orthodontic residency programs, immediate clinical modifications were made to allow for emergency visits only during the initial stages of the shutdown. Additionally, as medical and dental offices were allowed to re-open over time, the GSO clinical schedule was modified to accommodate a maximum number of office visits while still maintaining social distancing protocols. Specifically, the following changes were implemented.

Front desk modifications and patient protocol. In order to initially allow for patient care to take place in an altered format, the GSO internal marketing announced the “modified opening” of the clinic via social media including Facebook. Patients were contacted by phone and appointed for evaluation visits but no new patient visits were scheduled. All patients were told to present to the clinic for evaluation by a resident and were told that the wearing of a face mask was mandatory. Parents were not allowed into the clinical area with the exception of those patients with special needs who require parental supervision, and those parents were also required to wear a face mask. On arriving at the clinic, a clinical assistant questioned patients regarding their present health and their temperature was taken using an external forehead digital infrared thermometer. Once it was established that they were physically able to enter the clinic (no elevated temperature and a negative health questionnaire), patients were then instructed to rinse with an alcohol-free oral debriding agent and oral wound cleanser containing 1.5% hydrogen peroxide at a rinsing station just exterior to the clinic entrance. Patients then were directed to their clinical operatory and chair by the clinical assistant in charge of patient assignment and were seen by a resident for evaluation of their progress. For all minor patients, parents were contacted by phone by the front desk and/or resident and told of their child’s visit, findings, and next scheduled appointment time. Depending on their stage of treatment, most patients are assigned a 10-week follow-up reevaluation. In order to assure continuity of care, a 5-week follow-up virtual visit by the assigned resident is scheduled with the patient and occurs midway through the 10-week scheduled evaluation visit.

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New patient screening and evaluation records. Treatment coordinators are provided with photographs taken by the patient at home to determine whether the patient is a candidate for treatment. If approved, the patient is scheduled for a records appointment. Before the records are taken, prospective patients are re-evaluated to confirm that nothing was overlooked during the virtual exam (see “5-week follow-up visit” above). Routine orthodontic records are then taken and the case is assigned to a resident for treatment planning. The presentation of the treatment plan and informed consent is conducted via a Health Insurance Portability and Accountability Act compliant platform remote visit as well. The patient is then given another appointment for appliance placement.

Operatories. Three clinical bays with six clinical chairs per bay (18 total for Sandy Springs campus and 18 total for the Gwinnet campus) were modified so that a maximum of four clinical chairs can be used simultaneously, allowing for adequate patient distancing while still maintaining efficient patient/resident/faculty interaction. All clinical equipment and instruments are sterilized as mandated by clinical protocol, and all residents, staff, and faculty wear KN95 facemasks under a N95 facemask and face shield. Additionally, smocks and clinical jackets are worn by all residents, staff, and faculty, and all smocks are laundered after each day's use.

Research modifications. In keeping with Standard 6 of the Commission on Dental Accreditation (CODA), modifications in resident research projects were made to allow for PGY-1, PGY-2, and PGY-3 residents to fulfill their research requirements. At the onset of the residency program shutdown, there were 18 research projects in progress. One-third of those (6) were in the preliminary stages of planning (PGY-1) and the remainder were either proceeding through the initial stages of institutional review board application (PGY-2) or were in the early stages of data collection (PGY-3). Three of the PGY-3 projects involved clinical or patient-related studies, and these were prematurely halted due to the temporary program closure and subsequent loss of the patient population. The remainder of the PGY-3 studies involved survey questionnaires directed at dental and medical professionals as well as orthodontic residents. These studies were allowed to continue since they did not rely upon periodic visits by patients within the orthodontic residency program clinical setting and were not irreversibly affected by the shutdown.

For those studies that had to be discontinued, modifications were made to the original research topics which allowed the residents to formulate experimental hypotheses regarding the assigned topics, collect meaningful data related to the chosen topics, statistically analyze those data, and report on their findings in a standardized and appropriately designed research document. Specifically, the discontinued patient-based projects were modified in such a way as to allow for the residents to carry out quasi-systematic reviews of the pertinent literature for their assigned topics and to finalize meta-analyses of these particular reviews. These

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modifications were structured in such a way as to allow for appropriate statistical analyses to be carried out after data collection, thus allowing for a timely reporting of the results in a final draft, fulfilling publication standards for dental and medical literature.

While generally accepted orthodontic residency level research topics typically involve either studies reliant on orthodontic patients or laboratory/bench studies, survey studies and quasi-systematic reviews and subsequent meta-analyses are considered less robust and appropriate for residency program research. However, given the nature of the COVID-19 pandemic and the residency program shutdowns, it can be assumed that most orthodontic programs and their residents were unfortunately forced to alter or discontinue their ongoing patient-based or laboratory-directed research projects, resulting in residents not being able to successfully complete their assigned projects prior to graduation. Therefore, rather than being a less than ideal research design for graduate residency programs, the survey design or quasi-systematic review and meta-analyses have become a near perfect substitute for more formalized and longitudinally dependent research projects, which unfortunately had to be discontinued due to the COVID-19 pandemic shutdown. Relative to the GSO PGY-3 research projects, all of the modified studies have been successfully completed within the timelines set forth by the research committee, have met all of the design and biostatistical requirements developed prior to data collection, and satisfy all CODA Standard 6 requirements for orthodontic residency certification.

Conclusion

In a global sense, having contingency plans available for immediate implementation has unfortunately become the standard operating procedure for all organizations that intend to survive. Following the rapid and unexpected onset of the most recent disruption, business and educational protocols have been dramatically altered in response to these changes in the status quo, and it is the intent of this report to clearly offer an effective and readily implemented paradigm for use in orthodontic graduate education. This model represents the organizational parameters of a successful accredited educational program that was forced to alter its pre-pandemic schedule, and the comprehensive scope of this model allows for continued adaptive changes to be made within the framework of the original protocol.

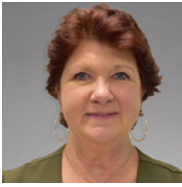


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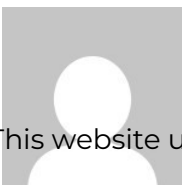
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Noam Green, DMD, MS, is a part-time faculty member at the Georgia School of Orthodontics.



Sergio Real, DMD, MS

Sergio Real, DMD, MS, is clinical director at Georgia School of Orthodontics.



Howell Lewis, DMD

Howell Lewis, DMD, taught the American Board of Orthodontics Board Exam Review class at Georgia School of Orthodontics during the spring 2020 semester.

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ISSN 1542-7919

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