

TRAINING THE NEXT GENERATION OF BIOFILM WARRIORS

Coastal Carolina Community College uses Guided Biofilm Therapy treatment protocols based on individual patient diagnosis and risk assessment to achieve optimal results.

[by Warren F. Gabarée, DDS; and Erika Spring, MEd, BSDH, RDH]



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The dental department of Coastal Carolina Community College (CCCC) provides opportunities for dental hygiene and dental assistant students to fully develop their talents and abilities, achieve individual excellence, and meet the changing needs of dentistry in today's world. CCCC, located in Jacksonville, North Carolina, has an unwavering commitment to finding the most effective ways to help its students achieve their goals.

“This educational philosophy is in strong alignment with me,” says Warren F. Gabarée, DDS, department head of CCCC's Dental Programs. “Prior to my arrival at CCCC, I spent a significant amount of time researching and applying a concept known as Change by Design, which was developed and promoted by the renowned industrial designer Tim Brown.”

The premise of Change by Design is to dispel the myth of innovation: that brilliant ideas leap fully formed from the minds of geniuses, when in fact most innovations come from a process of rigorous examination through which great ideas are identified and developed before being realized as new offerings and capabilities.

Change by Design is now the foundation of Stanford University's d.school as well as the inspiration behind Gabarée's efforts to establish CCCC as a leader in developing “tomorrow's dental hygiene syllabus for today.”

Change by Design Meets Biofilm and Periodontal Disease Management

Another example of Change by Design is Guided Biofilm Therapy (GBT). This systematic, predictable solution for oral biofilm management was developed by Swiss company EMS Dental and launched in the US during the 2019 Midwinter Meeting of the Chicago Dental Society. GBT protocol utilizes the company's clinically proven AIRFLOW®, PERIOFLOW®, and PIEZON® technologies.¹

GBT consists of treatment protocols based on individual patient diagnosis and risk assessment in order to achieve optimal results. The treatment is designed to be administered in the least invasive way, with the highest level of comfort, safety, and efficiency.

In April 2019, Erika Spring, MEd, BSDH, RDH, a full-time hygiene instructor at CCCC, was invited to

attend a “train the trainers” workshop in Chicago, Illinois, organized by EMS Dental and the Swiss Dental Academy. During this session, the attendees learned the following:

- ▶ At the heart of GBT is the AIRFLOW® Prophylaxis Master device, which applies the super-fine erythritol AIRFLOW® PLUS powder via the AIRFLOW® MAX handpiece to thoroughly remove biofilm in the sulcus area and shallow pockets up to 4 mm, on the tongue and gingiva, and on the palate.
- ▶ AIRFLOW safely and comfortably removes biofilm, stains, and young calculus deposits on natural teeth, restorations, and implants. The device effectively cleans and polishes in 1 single procedure and emits fewer aerosols than other commonly used biofilm management technologies.

During the workshop, Spring decided to become an EMS trainer and to introduce the GBT curriculum to CCCC.

“As a clinical dental hygienist of 23 years, it's important to me to provide our students with the knowledge and ability to successfully treat all types of patients as they enter the real world of dental hygiene,” she says. “In November 2019, I demonstrated the EMS technology and protocol to Dr Gabarée with the help of a volunteer patient from the college's clinic.”

“I immediately saw GBT with AIRFLOW as the 21st-century treatment technology and protocol that would facilitate our ability to graduate an elite group of dental



▲ **Figure 1.** Initial biofilm removal on patient using EMS AIRFLOW® technique. **Figure 2.** EMS AIRFLOW® Technique performed using aerosol control.



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▲ **Figure 3.** The EMS AIRFLOW® Technique is designed to be administered in the least invasive way.



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▲ **Figure 4.** Petty Officer 3rd Class T. Alford of the US Navy treating a periodontal patient. **Figure 5.** The AIRFLOW Prophylaxis Master (AFPM) in the Coastal Carolina Community College Dental Clinic.

hygienists who are not only highly skilled in the use of this advanced biofilm management modality, but who are also positioned to lead the way to its broader adoption,” Dr Gabarée says.

Dr Gabarée and Spring agreed this was technology that could not only radically change the way the college taught its students about biofilm management but also could be a catalyst for the paradigm shift needed to change the state of oral and systemic health for patients and the future of dental hygiene care.

Prior to purchasing and implementing the AIRFLOW Prophylaxis Master unit and GBT protocol in April 2020, the college used EMS Handy units, a portable version of the AIRFLOW.

“We loved our Handy units as an introduction to AIRFLOW technology, but there is no comparison to the power, efficiency, effectiveness, and comfort of the AIRFLOW Prophylaxis Master, nor can they complete all steps required of the GBT protocol to manage biofilm as well as hard deposits,” Spring says.

Putting the Purchase Into Practice

Once the college purchased 7 AIRFLOW Prophylaxis Master Units, the next step was to train the instructors; teach the students; and, above all, show tangible results on the clinic’s patients.

Fortunately, EMS Dental’s robust training and support program helped the college quickly achieve the clinical outcomes needed to justify its investment. This included a full-day of comprehensive, hands-on training for all full-time faculty.

“Too many graduating classes of dental hygienists are still ‘cleaning teeth,’” says Deborah Zafropoulos, clinical North American sales and education manager for EMS. “Our goal with Coastal Carolina Community College is to develop a strong partnership in order to support their educational process of teaching, developing, providing, and ultimately graduating the finest, multidisciplinary-trained biofilm therapists in North America.”

Once Spring was fully trained, she was able to lead the continued learning process for the CCCC faculty, including hands-on training for adjunct faculty.

The Real Test: Student and Patient Feedback

On a day-to-day level, Spring conducts GBT trainings as well as a hands-on lab for the students. During these sessions, each student participates in a round robin series of clinical “airflowing” experiences that include traditional methods and new technology.

In this way, students are able to form their own conclusions about usage, comfort, and efficiency. The overwhelming majority of students say they love the technology and the protocol.

GBT includes critical elements of the dental hygiene process of care such as assessment, disclosing, and education. This process is direct from the curriculum of dental hygiene schools. Too often in the real world these elements get left out because of time constraints. The GBT approach allows critical debridement techniques to be performed quickly and efficiently, making it possible to bring all the critical elements of care back to the operatory.

The response of CCCC patients who experience GBT has been favorable as well. Patients were able to gain a deeper understanding of why plaque removal is critical and how unremoved plaque facilitates biofilm development, which fuels further plaque formation. After they have undergone GBT treatment, most patients say they experienced less stress when compared with previous treatment using scaling and root planing.

The application of GBT is a win-win for clinicians and patients alike. For example, Dr Gabarée recently was able to treat all 4 quadrants during 1 appointment. The appointment took up the same amount of time Dr Gabarée would schedule for just treating the upper and lower quadrants of 1 side only using scaling and root planing. In addition, the clinical results of GBT were dramatically less traumatic for the tissue treated, which significantly accelerated the healing response.

Over the past year, CCCC introduced GBT into the curriculum for second-year students on selected patient types to maximize student requirements. As the school develops a team of faculty GBT experts, it also will conduct several case studies of patients treated by full-time faculty.



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▲ Figure 5. The CCCC Dental Clinic owns 7 AIRFLOW Prophyaxis Master units on carts.

This will ensure that the CCCC faculty can guide students through complex treatment plans. Cases will have full perio assessments, before-and-after photos, and documented progress from initial therapy to maintenance.

Spring, who teaches foundational and advanced instrumentation as well as periodontology, says this program will enable freshman students to transition to GBT at a quicker pace. “We finally have the opportunity to have students well positioned in complete periodontal treatment with cutting-edge science and technology, ready to enter the workforce and spread the excellence of GBT,” she says.

“The patient feedback has been amazing,” Spring says. “We are finding fewer patients are requiring local anesthesia for periodontal treatment, and patients are more comfortable and relaxed. Each GBT posttreatment survey reflects the level of care and comfort we always

want our students to provide and our patients to experience.”

Conclusion

The authors passionately believe GBT is the future of dental hygiene and that hygiene education programs have the responsibility to bring innovative and cutting-edge technology to the next generation of students. Thanks to GBT, hygiene educators have a unique ability to influence the next generation of clinicians and put the science-based technology in their hands so that they may educate others and provide optimal patient care. ●

REFERENCE

1. Mensi M, Feres M, Calza S, Sordillo A, Scotti E, Garzetti G. One-stage full mouth instrumentation (OSFMI): clinical outcomes of an innovative protocol for the treatment of severe periodontitis. *J Int Acad Periodontol.* 2020;22(3):129-136.

ABOUT WARREN F. GABARÉE, DDS

Dr Gabarée is currently the department head and instructor for both the dental assisting and dental hygiene programs at Coastal Carolina Community College in Jacksonville, North Carolina. Prior to his current position, Dr Gabarée, was a part-time instructor at Allan Hancock College in Santa Maria, California, and maintained a full-time private dental practice for over 15 years. As a Certified Leadership Instructor of Phi Theta Kappa’s humanities-based leadership development curriculum, he also taught leadership development for over 8 years to a diverse segment of the Santa Maria community. Dr Gabarée holds a doctor of dental surgery from the University of Maryland School of Dentistry, a master of education with a concentration in higher education administration from Northeastern University, and a bachelor of arts from Villanova University. In May of 2015, at a time of life when most dentists his age would be planning their retirement years, Dr Gabarée chose to pursue his master of education degree to further his ability to be a catalyst of thought and influence for our nation’s next generation of dental health care providers and leaders.

ABOUT ERIKA SPRING, MED, BSDH, RDH

Spring is a clinical dental hygienist by heart and has served her profession in various roles over the past 30 years. Currently a full-time faculty member at Coastal Carolina Community College (CCCC) as well as Guided Biofilm Therapy (GBT) trainer for EMS North America since 2019, Erika provides both didactic and hands-on training courses on behalf of SDA/EMS. She has further adapted and implemented the GBT curriculum in the dental hygiene curriculum at CCCC. Erika is an alumni of CCCC, where she began her dental hygiene journey. She holds a bachelor’s in dental hygiene and a master’s in educational leadership from Northern Arizona University. Spring is a Certified DISC Behavioral Consultant. Her mission is to provide innovative strategies to enhance patient care by educating today’s students, and helping practices build dream teams. Her passion for clinical dentistry and education inspired her to found Spring Innovative, a cultivating and innovative consulting platform for dental professionals at heart.



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