ach of dentistry’s previous paradigm shifts has permanently altered the profession. Innovations such as four-handed dentistry, dental insurance, fluoride, and high-speed handpieces forced dentists to become accustomed to the new way or be forced to close their doors.

The soft tissue management paradigm shift occurred in 1985. At that time, there was a void in the general dentists’ treatment of periodontal disease lying between prophylies for the general population and surgery for the patients with advanced disease. ProDentec recognized this and brought me and four other dentists together to codify the first soft tissue management (STM)™ protocol, which has since been updated multiple times. The goal was to present an organized and systematic approach to the diagnosis and treatment of early perio breakdown. Following this protocol, general dentists progressed from recommending “super prophies” to presenting appropriate conservative perio treatments. They now perform more meticulous scaling and root planing (SRP) with local and/or systemic chemical adjunctive therapy. Doctors and hygienists inform patients about their disease state and demonstrate appropriate home care techniques. Nonsurgical perio treatment has become a central approach to the comprehensive care of the dental/periodontal patient.

In 1995, the American Academy of Periodontology (AAP) issued its official “Position Statement on Soft Tissue Management” acknowledging that nonsurgical periodontal therapy had become mainstream in GP offices. The paper re-emphasized the clinical science behind the treatment. Research on new diagnostics, treatments, devices, and technologies furthered the growth and development of STM. Today, STM has evolved into a total team approach. Parts 1 and 2 of this article address the updated clinical treatment of STM, which I call “21st Century Perio/Hygiene”; and Part 3 examines its financial implications, including administration, insurance, and fees.

The paradigm shift for dentistry in the 21st century has the following four significant intermingled components:

1. The former “drill, fill, and bill” dental model, and the “hygiene department as a loss-leader” approach are outmoded due to fluoride’s success in reducing decay and the acceptance of nonsurgical perio protocols.

2. Insurance companies have been reducing dental benefits, and dental staff members are re-educating patients while trying to remain “insurance friendly.” Some offices have elected to be more “insurance independent” in order to minimize the economic impact of lower fees and more limitations from the carriers.

3. Dentistry has moved from a “needs-based” to a “wants-based” profession, with more than 90 percent of today’s dental work being “discretionary” treatment; and the majority of it is in the field of long-term restorative and cosmetic enhancements.

4. New materials and new technologies are being developed to allow today’s practitioner to accomplish dentistry unheard of a mere 10 years ago.
Perio/Hygiene for the 21st Century

Important new adjunctive services, such as whitening, tobacco cessation, digital imaging (intraoral video and still photography, and radiography), sealants, bactericidal ultrasonic debridement, full-mouth disinfection within 24 hours, halitosis treatment, host modulatory therapy, laser-assisted periodontal treatment (LAPT), DIAGNOdent® laser caries detection, nutritional counseling, total wellness assessment/counseling for enhancing host response in periodontal patients, and locally administered antibiotics are some of the new services offered by the 21st Century Perio/Hygiene department.

Today’s dental challenge is to keep science in the forefront of decision-making, using research to validate commercial claims and treatment decisions, while still maximizing profitability in the practice.

It’s more than the mouth

There is now recognition of the association between periodontal diseases and systemic diseases, and research documenting this connection continues to grow. Heart disease, premature birth, diabetes, stroke, and chronic respiratory conditions are significant systemic conditions associated with oral health. The first Surgeon General’s Report on Oral Health in America was published in 2000. This comprehensive research asserted the possible role of periodontal diseases as a risk factor for systemic diseases. Additional research, primarily “intervention studies,” is being conducted to prove the extent to which oral infection may be causative, not merely associative, of systemic conditions.

Periodontitis through the decades is illustrated in the figures. The classic model for periodontitis in the 1970s (Fig. 1), evolved into the random burst nonlinear model for periodontal progression in the mid-1980s (Fig. 2). Socransky, et al., researched the understanding of the microbiology of periodontal infections (Fig. 3), and then in 1997, Page and Kornman offered the Current Model of Periodontitis (Fig. 4).

We now focus on a medical/dental model in the management of periodontal infections. Sustained-release antimicrobials have been in use for almost 20 years since Max Goodson first pioneered the tetracycline fiber, Actisite, developed by Alza Pharmaceutical. Today, local agents like PerioChip® (chlorhexidine), Atridox® (doxycycline), and Arestin™ (minocycline microspheres) are widely used sustained-release antimicrobials. Systemically delivered antibiotics, host-modulatory therapies like
Periostat®, and risk profile assessments for prognosis join locally administered antibiotics in the medical management of periodontal disease today.

In 2002, as a member of OraPharma, Inc.’s protocol advisory board, I had the opportunity to help create a state-of-the-art, comprehensive medical/dental treatment approach for the 21st century dental practice. Johnson & Johnson Oral Health Care division, the new owners of OraPharma and Arestin, released their protocol in early 2003. Minocycline microspheres (Arestin) treatment is the latest addition to the controlled-release chemotherapeutic therapies. Its user-friendliness and efficacy have made it the most popular of these agents. The combination of Arestin and SRP has been shown to be more effective than SRP alone. Arestin™ plus SRP was 26 percent more effective in shifting sites to <5mm probing depths (PD). Average pocket depth reduction for Arestin plus SRP (~2mm) was about twice as much as SRP alone (~1mm). This reduction makes maintenance of these sites easier and more predictable. In every subset (smokers, molars, PD >5mm, PD >7mm), Arestin plus SRP proved to be more effective than SRP alone. As Bill Killoy, past chair of perio at UMKC Dental School, said about LAA, “It’s another important club in your golf bag today to score your best result in a round against periodontal disease.”

21st Century Perio/Hygiene treatment protocol

A new era is dawning in the early diagnosis and treatment of periodontal disease, outlined in Table 1. “21st Century Perio/Hygiene” incorporates behavioral therapies for patient acceptance and compliance, practice management principles for implementation, and current clinical research for nonsurgical, full-mouth disinfection using bacteriocidal ultrasonic root debridement therapies.
impeccable plaque control training is given to patients. Patients become willing participants to rid themselves of malodor, biofilms, and bleeding gums. Phase 1 calls for tongue scraping with home rinsing and/or irrigation using a chlorine dioxide product (Closys® or Oxyfresh®) and/or a zinc-based mouthwash (Zytex® Discus) to chemically neutralize volatile sulfur compounds. Power brushes (Rotadent one step, Sonicare, Oral-B Braun, etc.) enhance outcomes, and embrasure shaped toothpicks and/or proxabrushes are dispensed to simplify proximal cleaning for patients who will not or do not floss.

Phase 2 is the full-mouth disinfection phase of one- or two-visit, full-mouth SRP within a 24-hour period. Many offices use povidone iodine and/or sodium hypochlorite (bleach) and/or other anti-infective agents in the ultrasonic reservoirs (e.g. Prodentec ProSelect III, Dentsply Cavitron, EMS Piezon, Satelec ACTEON, etc.) for lavage during SRP (either medicament is diluted 10:1 with water). High-speed evacuation prevents patients from swallowing the antimicrobial. Also, on the one- or two-day, full-mouth treatment, Arestin is placed in those sites measuring a ≥5mm probing depth following SRP. The patient is instructed to rinse and/or irrigate with 0.12 percent chlorhexidine (e.g. Peridex®, Perioguard®) for two weeks, b.i.d., for bacterial control.

Phase 3 is 18 weeks of re-evaluation and nonsurgical re-treatment of unresolved sites prior to the maintenance phase. Other systemic drugs may be employed to more aggressively treat the resistant infection. They may include short-term combination antibiotics, after at least one re-treatment with SRP and LAA, and/or modulation of the host response enzymes with Periostat (low-dose doxycycline).

This comprehensive care model fosters value in the minds of patients as they become educated about bad breath, bleeding as a sign of active infection, and risk factors for systemic disease. They appreciate their six-month commitment to the treatment. This will be discussed further in Part 3’s comparison of insurance-based itemized fees to the nonitemized program fee approach.

This article presents a state-of-the-art, nonsurgical perio program for the general dental office. In Part 2, we will discuss the re-evaluation, therapeutic endpoints, and maintenance or supportive perio therapy. Part 3 will cover financial matters such as administration, insurance, and fees.

**Table 2 – Current Concept of the Nature of Periodontal Disease**

by Dr. Ray Williams

- Periodontitis does not affect all people similarly. Much diversity exists among individuals and among teeth with regard to susceptibility to disease.
- Specific innate, acquired, and environmental risk factors contribute to disease susceptibility and to a person’s response to treatment.
- Periodontitis, once initiated, does not necessarily progress steadily and linearly if untreated. Rather, periodontitis progresses in “episodes” of attachment loss.
- Specific bacteria and bacterial complexes are the causative agents of periodontitis.
- The host immuno-inflammatory response, although protective, is actually responsible for the tissue destruction of periodontitis.
- The cellular events of wound healing can be modulated with grafts, barrier membranes, and/or biological mediators to foster the maximum regeneration of periodontal attachment structures.
- Periodontitis may be a risk factor for systemic disorders such as cardiovascular disease, diabetes, and low birth weight.

**Table 3 – Four Therapeutic Endpoints of 21st Century Perio/Hygiene**

by Dr. Steven Gutter, MBA

1. Consistent absence of bleeding in all sites
2. Pockets don’t get deeper (no further loss of attachment — CAL)
3. Gingival collar tightens around tooth (adequate host immune response)
4. Minimal volatile sulfur compounds — No halitosis