Challenging the Process of Care: *Developing Clinical Pathways that Increase Accountability for Successful Outcomes*

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Information from the recent 88th annual session of the American Academy of Periodontology should ignite a new enthusiasm for the future of the dental hygiene profession. The research and conclusions offered by masters such as Drs. Caton, Drisko, Genco, Offenbacher, Oringer, and Sokransky provide us with an increasing body of evidence that we should be using to shape our clinical decisions in the management of nonsurgical cases of chronic periodontitis. Although there were numerous courses that dealt with tissue engineering and reconstructive surgery, a number of speakers shared cases of moderate-to-advanced chronic periodontitis that had clinically successful outcomes based on nonsurgical therapies. Several presenters encouraged postponing the decision to perform surgery, opting for the more conservative intervention of scaling and root planning, and waiting to see if "Mother Nature would take over." There is validation from many highly respected periodontists that we can indeed, in many situations, accomplish great outcomes with nonsurgical therapy alone.

No one is better positioned to render this care than a technically competent dental hygienist. The opportunity to fulfill our scope of practice to its maximum extent seems unlimited, but *only* if the dental hygiene profession balances this opportunity with extreme discipline. Hygienists will only be able to achieve consistent therapeutic end points if they master their technical abilities, develop a fund of knowledge related to current research, and develop a sense of personal responsibility for determining what therapies offer the greatest promise for successful case outcomes.

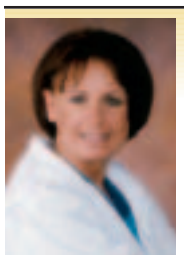
The Challenge

We need to accept responsibility for the clinical actions or inactions we recommend for the dilemma of the 6-mm bleeding pocket. Given the chronicity of the disease, and its rate of relapse and disease progression, we may not be doing such a good job at this. Although the science of periodontology has been advancing at light speed, its application to clinical practice is woefully lagging behind. Regardless of the directives made from the US Surgeon General's office,[1] the American Dental Association,[2] and the American Dental Hygienists' Association[3] to incorporate evidence-based decision-making into clinical practice, clinicians who have adopted this mandate and built clinical pathways to treat chronic periodontitis may be in a minority. Most general dentists and hygienists may still recommend and perform periodontal therapies that are either based on anecdotal or out-dated evidence, habit, or convention. In doing so, they fail to incorporate risk assessment or risk management via host modulatory therapy such as (Periostat® [CollaGenex Pharmaceuticals, Newtown, PA]) into routine client care, stopping short of comprehensive case management. Recommending treatment based solely on "what insurance covers" limits our ability to comprehensively manage chronic periodontitis, often predisposing these patients to accelerated rates of disease progression.

In many respects, the approaches used for case management of chronic periodontitis may look a little like the "Wild, Wild, West" during the frontier movement of the 1800s—unregulated activity with everyone "doing their own thing." Based on personal experience in clinical consulting, many clinicians admit they have no current scientific rationale for treatment decisions related to periodontal therapy and their recommendations to patients. Even more concerning is that many "newly scientifically aware" clinicians acknowledge that they were guilty in the past of recommending therapies and patient self-care routines that may actually conflict with current research. As a result, the rate of recurrence in disease activity intensifies, the spread of inflammatory infiltrate to the underlying supporting tissues continues, and worse yet, the risk of developing a number of systemic complications significantly increases.[4,5]

This revelation invites a challenge. The challenge is that dentistry needs to create clinical pathways that are driven by "now" science. As defined by the Institute of Medicine, clinical pathways are "systemically developed statements to assist practitioners' and patients' decisions about appropriate health care for specific clinical circumstances."[6] The world of medicine figured this out a long time ago.

Consider this: 80% of health care facilities use clinical pathways in treatment of cardiac conditions, orthopedics, and obstetrics[7] and the National Guideline Clearinghouse lists clinical pathways for the treatment of close to 1,000 entities, including disorders, complications, abnormalities, pathologic progressions, and traumatic injuries.[8] In attempts to promote interventions with proven benefits and discourage ineffective ones, countries around the world are implementing health care reform based on proof of effectiveness, including Germany, Italy, and Spain. The Scottish Intercollegiate Guideline Network uses a systemic multidisciplinary approach to prepare evidence-based guidelines. The Netherlands has produced guidelines since 1987, issuing more than 70 at a rate of 8 to 10 topics per year. France has more than 100 guidelines based on consensus conferences. Generally, France's guidelines are disseminated through networks of general practitioners and their effectiveness is evaluated through local audits.[6] Can we continue to ignore the vast benefits that the medical profession (and its patients) has experienced by designing and implementing clinical pathways that treat specific conditions and chronic diseases?



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The Problem

Our country presently has the worst-of-all case scenarios: a dental delivery system that is perceived as costing relatively more than the medical community's, and may appear to deliver less value than its medical counterpart. Americans have become frustrated with the high fees associated with dentistry. Couple that with a tarnished reputation from refusing to take responsibility for clinical outcomes and it becomes evident why dentists (and by association, one could argue hygienists) ranked at the top of a 2001 Gallup opinion poll conducted to determine which US professionals were least honest and ethical.[9,10]

Although it has been shown through evaluations that clinical pathways can improve the quality of care in medicine,[11] whether they can achieve this in the everyday practice of dentistry would seem to depend on dentistry's willingness to adopt defined protocols that are intensely researched, guaranteeing consistency of care and our willingness to become accountable for outcomes. Although the American Academy of Periodontology's (AAP) *Parameters of Care* sets forth a consensus on treatment considerations that are research-based, it is emphasized in the position paper that the parameters were not intended to "be deemed inclusive of all methods of care or exclusive of treatment appropriately directed to obtain the same results."[12] The presumption here is that those practitioners who are deciding what treatment is appropriate have an adequate fund of knowledge on which to base their clinical decisions. The AAP made several statements in *The Parameters of Care* that may support the need for developing a more defined clinical pathway to treat periodontal disease:

"Ultimately, it is the dentist who must determine

Problems associated with the absence of a clinical pathway for the treatment of chronic periodontitis include[6]:

- increased variation in diagnosis, treatment planning, and patient education
- compromised therapeutic outcomes
- professional confusion
- compromised professional credibility
- increased risk for malpractice litigation
- increased rejection of insurance claims

Benefits associated with implementing a clinical pathway for the treatment of chronic periodontitis include[6]:

- increased consistency and quality of care
- authoritative recommendations that guide practitioners in prescribing appropriate treatment recommendations
- alerts to dangerous, wasteful, or ineffective practices
- isolates clinicians' risk for malpractice litigation
- help in highlighting need for conducting new research in certain areas that correspond to variations to the clinical pathway (ie, when patients do not respond to clinical pathway)
- Substantiating needed care (through solidarity of claims) with third party payers

the appropriate course of treatment to provide a reasonable outcome for the patient."[12]

"It is the dentist, together with the patient, who has the final responsibility for making decisions about therapeutic options."[12]

There appears to be a void in these statements. Therapeutic options cannot be determined without current scientific evidence on which to base decisions. It may be that the AAP assumes that dentists (and it can be argued this applies to hygienists as well) have a fund of knowledge based on current evidence and that most clinicians are dedicated to updating their clinical protocols to support those lines of evidence. However, this appears not to be the case. As highlighted in the *Executive Summary of Oral Health in America: A Report of the Surgeon General:* "There is a gap between research findings and oral health prevention and health promotion practices and knowledge of the public and health professions."[1] An ethical question begs an answer here. When scientifically valid information is available to dentists and hygienists, do we not have an ethical responsibility for its review, consideration, and incorporation into treatment planning options? Furthermore, do we not have an ethical responsibility to stay current in research findings in order to disseminate that information to patients, thereby empowering them to participate fully in considering their best treatment options?

Also delineated in the US Surgeon General's report is the finding that "Reliable and valid measures of oral health outcomes do not exist and need to be developed, validated, and incorporated into practice and programs."[1] Again, although *Parameters of Care* discusses various desired outcomes of periodontal therapy,[12] the leap of faith here is that dentists and hygienists understand the magnitude of change prerequisite to a desired clinical outcome.

Fixing the Problem

The formula for achieving maximum definitive outcomes may depend

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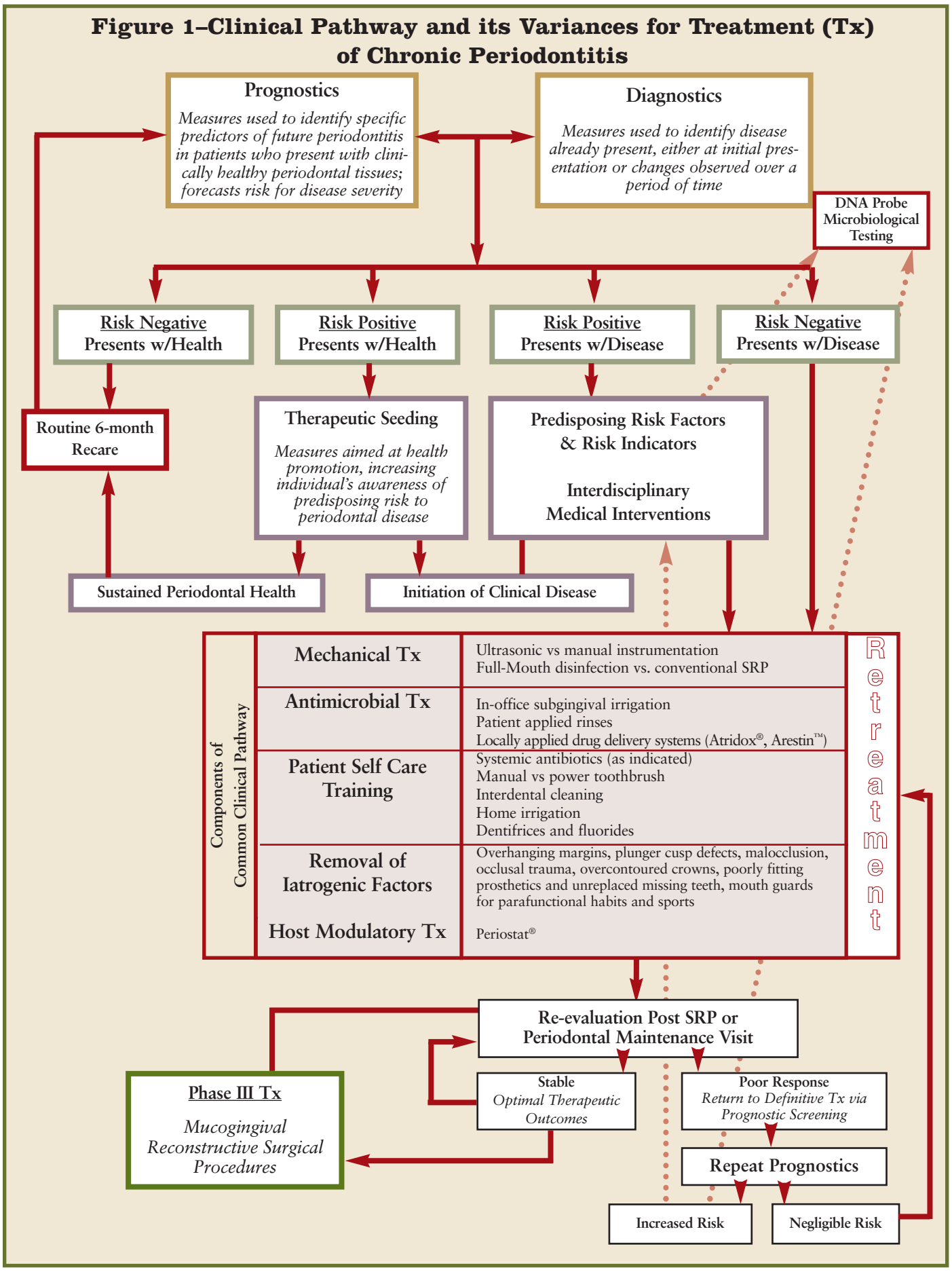
on developing a universally acceptable clinical pathway based on intense research and deliberation of the cumulative efficacy of evidence-based treatment components that build on and reinforce one other. Hypothetically, is it possible that we could significantly decrease the frequency and severity of disease activity if dentistry could prescribe a defined clinical pathway to comprehensively manage chronic periodontitis? Theoretically, shouldn't the cumulative efficacy of the collective components of treatment increase the probability of successful case outcomes? Should this question help focus attention on research initiatives?

Making treatment modifications to address the multifactorial nature and differential susceptibility to chronic periodontitis is a variance to the clinical pathway just as unexpected complications or unique circumstances are considered in medical models. Clinical pathways in the medical community are able to standardize care for 60% to 70% of patients with similar diagnoses.[13] This has direct application to periodontal therapeutics when one considers that nonsurgical treatment that includes scaling and root planing (SRP) has been estimated to be effective in bringing about desirable clinical outcomes in 80% of periodontal patients.[14] SRP is the mechanical common denominator and standard therapy in treatment for most periodontal cases, including chronic, acute, and refractory cases. There are other common denominators to treatment, including antimicrobial therapy, patient self-care training, and host modulatory therapy. In developing a clinical pathway in dentistry it is very useful to look at a medical model.

A variance is a deviation from any component of the clinical pathway that can potentially affect the expected outcome of the patient.[13] Variances to a clinical pathway are important to consider and are extremely relevant in defining treatment of chronic periodontitis. Variances can be positive; for example, if a patient's immune response can handle the microbial challenge better than most other patients in his cohort group, the patient may progress ahead of the pathway and it may be possible to decrease the frequency of periodontal maintenance visits. Conversely, a variance could be negative if the patient does not progress as planned. This may occur in a diabetic patient with poor glycemic control that places him or her at greater risk for progressive bone loss.[15] After prognostic screening, the unique management of various risk factors and indicators (ie, smoking, diabetes, genetic susceptibility, stress, human immunodeficiency virus, etc.) becomes a variance to the clinical pathway that cannot be overlooked. Examples of variances to the pathway may include smoking cessation programs, microbiologically monitoring family members of patients who have aggressive forms of the disease, and monitoring markers for interleukin 1 (IL-1) genotype variations to provide preventive intervention. Other common components of a definitive care pathway (and variances as a function of predisposing risk) to treat chronic periodontitis are depicted in Figure 1. Note that roughly 80% of chronic periodontitis cases can be successfully treated given the common definitive care pathway, as depicted in Figure 1. Interventions to address predisposing risk factors and indicators are treated as variances to that common pathway.

Negative variances occur if the interventions are not completed or if the patient fails to meet the expected outcomes. Variance documentation becomes especially important in being able to analyze why a periodontal intervention failed and determining an alternative therapeu-

Figure 1–Clinical Pathway and its Variances for Treatment (Tx) of Chronic Periodontitis



tic action to address the variance in order to return a patient to the common clinical pathway (if possible). Ultimately, monitoring the variances to a clinical pathway should provide dentistry with the information it needs to continually refine the process of care in this elusive chase for stable outcomes.

Failing to realize the importance of risk stratification (variances to the pathway) and incorporating prescribed interventions into the plan of care for comprehensive treatment of chronic periodontitis may soon be considered the classic definition of professional neglect. It may be some time before the profession achieves consensus on defining a prescribed clinical pathway for comprehensive care of these chronically diseased patients. In the meantime, it may become incumbent upon each practitioner to independently define a pathway that incorporates all the common components and variances of definitive, non-surgical care (as illustrated in Figure 1) based on their own thorough study of the literature and disciplined adherence to practicing it in routine clinical settings.

A clinical pathway will differ from protocols or algorithms in that a clinical pathway used for treatment of chronic periodontitis will have a more comprehensive scope that includes thorough risk assessment, primary preventive strategies for "at risk" patients and well rehearsed interdisciplinary interventions from the medical community. As we continue to accumulate evidence of serious systemic implication related to chronic periodontal disease progression, concise statements related to diagnostics and therapeutic strategies that target both the bacterial challenge and the host response to that challenge will become increasingly important. And…time is of the essence. COH

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