

# Recent Treatment Plan Concepts In Periodontal Therapy

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## **ABSTRACT:**

*The main aim of this review article is to outline the recent treatment plan concepts in Periodontal therapy. Treatment of periodontal disease is a complex and multidisciplinary procedure requiring periodontal, surgical, restorative and orthodontic treatment modalities. Several authors attempted to formulate models for periodontal treatment that orders the treatment steps in a logical and easy to remember manner.(1)*

## **INTRODUCTION:**

The treatment plan is the blueprint for case management. It includes all procedures required for the establishment and maintenance of oral health. It should be orderly but at the same time flexible as it is difficult to determine at times how the teeth respond to the therapy. The whole success of the treatment should not depend upon the response of one or two teeth. After the diagnosis and prognosis have been established, the treatment is planned. The plan should encompass short- and long-term goals. In addition, the residual effects of periodontal disease or anatomic aberrations inconsistent with realizing and maintaining long-term stability must be addressed. More recently, this phase of treatment includes techniques performed in anticipation of esthetic or implant dentistry, such as clinical crown lengthening, covering denuded roots, alveolar ridge retention or augmentation, and implant site development.(2) The treatment plan includes all procedures required for the establishment and maintenance of oral health and involves the following decisions(3):

Need for emergency treatment (pain, acute infections).

1. Teeth that will require removal.
2. Periodontal pocket therapy techniques (Nonsurgical followed by surgical).
3. Endodontic therapy. The need for occlusal correction, including orthodontic therapy.
4. The use of implant therapy.
5. The need for caries removal and the placement of temporary and final restorations.
6. Prosthetic replacements that may be needed and which teeth will be abutments if a fixed prosthesis is used.
7. Decisions regarding esthetic considerations in periodontal therapy.
8. Sequence of therapy.

Unforeseen developments during treatment may necessitate modification of the initial treatment plan. However, except for emergencies, no therapy should be initiated until a treatment plan has been established

## SEQUENCE OF THERAPEUTIC PROCEDURES:

**In this model, treatment is undergone in four phases:MODEL-1(4)**

1. Systemic phase of therapy including smoking counseling
2. Initial (or hygiene) phase of periodontal therapy, i.e. cause-related therapy
3. Corrective phase of therapy, i.e. additional measures such as periodontal surgery, and/or endodontic therapy, implant surgery, restorative, orthodontic and/or prosthetic treatment
4. Maintenance phase (care), i.e. supportive periodontal therapy (SPT).

**In this model, treatment is divided into the following phases as detailed below:MODEL-2(3)**

1. **Preliminary Phase**
  - (a) Treatment of emergencies:
    - Dental or periapical
    - Periodontal
    - Other
  - (b) Extraction of hopeless teeth and provisional replacement if needed (may be postponed to a more convenient time)
3. **Nonsurgical Phase (Phase I Therapy)**
  - (a) Plaque control and patient education:
    - Diet control (in patients with rampant caries)
    - Removal of calculus and root planing
    - Correction of restorative and prosthetic irritation factors
    - Excavation of caries and restoration (temporary or final, depending on whether a definitive prognosis for the tooth has been determined and the location of caries)
    - Antimicrobial therapy (local or systemic)
    - Occlusal therapy
    - Minor orthodontic movement
    - Provisional splinting and prosthesis
4. **Evaluation of Response to Nonsurgical Phase, Rechecking**
  - Pocket depth and gingival inflammation
  - Plaque and calculus, caries
5. **Surgical Phase (Phase II Therapy)**
  - (a) Periodontal therapy, including placement of implants
  - (b) Endodontic therapy
6. **Restorative Phase (Phase III Therapy)**
  - (a) Final restorations
  - (b) Fixed and removable prosthodontic appliances
  - (c) Evaluation of response to restorative procedures

## Recent Treatment Plan Concepts

(1)The recent treatment plan concepts includes the TRIMERIC MODEL,due to the arrangement of treatment steps that resembles the petals of a trimeric flower e.g. Mariposa Lilly, introduce a modification of the second model of periodontal treatment planning in which periodontal treatment is done in stages (phases) that are ended with, centered, and aimed towards the maintenance phase (Phase IV) which is the final aim that the patient will be placed in for lifetime.Each phase is followed by a Re-evaluation Phase in which decision of the next step of treatment is made. **Phase I (Initial Therapy – Disease Control Phase)**

Initial therapy or phase I is the first step in the sequence of procedures that constitute periodontal treatment.

The objective of initial therapy is the reduction or elimination of gingival inflammation. This is achieved by complete removal of all factors responsible for gingival inflammation such as plaque, calculus, correction of defective restorations, restoration of carious lesions, etc.

Initial Therapy involves the following procedures:

### **1. Treatment of Emergencies**

Emergency treatment is the first priority for any dental patient in need of it. This includes extracting or root canal treating infected or abscessed teeth, treatment of periodontal abscesses, or beginning root canal treatment of Endo-Perio Lesions. This may include antimicrobial therapy.

### **2. Antimicrobial therapy**

Antimicrobial therapy is used mostly locally in periodontics. This includes mouthwashes and local delivery of antimicrobials into the periodontal pockets. Rarely, we may need systemic antibiotic treatment in case of specific microbial infections (as streptococcal mucositis, herpes gingivostomatitis, and candidiasis) and infections with systemic involvement.

### **3. Diet Control**

Dietary deficiencies (as Iron or Zinc Deficiencies, folate deficiency, or Vitamin Deficiencies B12, C or D) should be addressed and corrected from the start of periodontal treatment. This might include referral to general or specialized physician or a dietician.

### **4. Patient Education and motivation**

Treatment plan should be understood by the patient before the active treatment is initiated and the dentist should teach the patient how to do oral hygiene measures. The patient should understand from the beginning of treatment that the responsibility of maintaining his teeth is primarily his or hers.

### **5. Correction of Iatrogenic Factors**

Few exceptions; rough, over-contoured, over-hanging, or subgingivally located Restorations, Removable or fixed Prosthesis and Orthodontic Appliances may be associated with pronounced accumulation of plaque and periodontal inflammation.

Like calculus, such restorations or appliances interfere with efficient plaque control and must be corrected or removed to allow for reduction or elimination of gingival inflammation.

### **6. Deep Caries**

Carious lesions should be excavated and temporary restorations placed. Caries in the vicinity of the gingiva interferes with plaque removal and consequently with gingival health. And exposed teeth should be treated. Endodontics for Infected teeth should be started in this phase.

### **7. Hopeless Teeth**

If some teeth have been diagnosed as “hopeless” and they are not in a strategic or vital position for temporary maintenance of occlusal relations, such teeth should be extracted at this time. Partially impacted third molars with communication to the oral cavity should also be extracted.

### **8. Preliminary Scaling**

The next step should be gross scaling and polishing of the teeth, followed by specific instruction in oral hygiene.

### **9. Temporary Splinting, occlusal adjustment, and minor orthodontic tooth movement**

Although temporary splinting for mobile teeth has not proved to be useful in promoting periodontal healing during therapy, It may facilitate treatment procedures such as scaling, occlusal therapy, and

surgical periodontal therapy. Heavy contact on mobile teeth should be reduced or orthodontic tooth movement should be done to correct it.

### **10. Scaling and Root Planing**

Fine scaling and root planing are necessary to eliminate irritation from subgingival calculus and contaminated cementum.

#### **Re-evaluation Phase:**

In the trimeric model, re-evaluation is a transitional step that needs to be done between every phase of the Treatment plan and the other. It is usually done after 3-6 weeks from initial therapy. It includes:

1. Re-evaluation of the results of initial therapy (extent of improvement in pocket depths and attachment level for the whole periodontium).
2. Re-evaluation of oral hygiene status and affirming Oral Hygiene instruction if needed.
3. Measuring Bleeding and Plaque score and checking for improvement.
4. Review of the Diagnosis and prognosis and modification of the whole treatment plan if needed.

Re-evaluation should be done after 3-6 weeks of Surgical and Restorative Therapy and is the most important phase in the treatment plan as the major decisions during treatment are made in it.

#### **Phase II (Surgical Therapy)**

During the evaluation of Phase I, evaluate the need of the periodontium for surgery. Surgery may be indicated in the following cases:.

1. Pocket management in specific situations. The most popular traditional indication is the presence of pockets of  $\geq 5$ mm.
2. Irregular bony contours or deep craters.
3. Areas of suspected incomplete removal of local deposits.
4. Degree II and III furcation involvements.
5. Distal areas of last molars with expected mucogingival problems.
6. Persistent inflammation.
7. Root coverage.
8. Removal of gingival enlargements.

#### **Phase III (Restorative Therapy)**

In which Restoration of the defects with fixed or removable prosthodontics, Periodontal Prosthesis, or other kinds of restorations are done.

#### **Phase IV (Maintenance Phase - Supportive Periodontal Therapy):**

Preservation of the periodontal health of the treated patient is as important as the elimination of periodontal disease. In the maintenance phase, patients are placed on a schedule of periodic recall visits for maintenance care to prevent recurrence of the disease. The intervals between recall appointments are varied according to the patient condition.

This should be the end goal of periodontal treatment. The long-term success of periodontal treatment depends on the maintenance of the results achieved in the other phases of the periodontal treatment plan. This mandates a lifelong relation between the patient and the treating dentist or periodontist.(1)

#### **Advantages of the Trimeric Model of Periodontal Treatment planning:**

1. Introduces a logical, easy to remember order of the steps of treatment of periodontal disease.
2. Making maintenance phase in the center of the treatment plan clearly establishes it as the goal of periodontal treatment that should be reached after completion of the necessary treatments.
3. Clearly indicates the necessity of reevaluation between the treatment phases to check the improvement of the periodontal condition after each treatment phase and revise the overall treatment plan accordingly.

#### **CONCLUSION:**

Nouvel approaches are required to help the efficiency of Periodontal therapy, it is likely to cause less damage, less time consuming and cost effective. Long term stability after periodontal therapy is possible with good maintenance of oral hygiene by the patient, avoid risks (such as smoking) and with regular maintenance care programme. There is conclusive evidence from clinical studies that systemic and regular monitoring of periodontal parameters is necessary to detect and intercept any new or recurrent disease. Individual variations to disease susceptibility will determine the frequency and level of professional input required.

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