PROTOCOLS FOR

DENTAL MANAGEMENT

OF THE

MEDICALLY COMPROMISED

PATIENT
Following are general protocols for the management of medically compromised dental patients. As more specific protocols are developed they will be included in this section.

Generally the guidelines followed in the program will closely adhere to those found in the following text reference which is available in the bookstore and should be a part of your permanent library:

**Dental Management of the Medically Compromised Patient**
*James W. Little, Donald A. Falace*
*Fifth edition, 1997*
*C.V. Mosby Company*

Additional references to use as guidelines are:

1. **Principles and Practice of Oral Medicine**
   Sonis, Fazio and Fang
   W.B. Saunders Company

2. **Internal Medicine for Dentistry**
   Louis F. Rose, Donald Kaye
   C.V. Mosby Company

3. **Clinical Care Guidelines for the Dental Management of the Medically Compromised Patient**
   Veteran's Administration Office of Dentistry
   V.A. Central Office, 1986
SCREENING MEDICALLY COMPROMISED PATIENTS

**GOAL:** To evaluate any source of infection that may compromise successful medical or surgical therapy and restore optimal oral health and function.

1. Full mouth intra-oral radiographs plus panoramic radiograph (if dentulous)
2. Panoramic radiograph only if edentulous or not able to take intraoral films
3. Thorough medical and dental history, including medications documented on our own dental chart.
4. Complete dental charting, periodontal charting if appropriate, but periodontal probing of all teeth will routinely be accomplished.
5. Physician consultation to corroborate medical history and coordinate dental and medical care.
6. Initiate preventive therapy.
8. Arrange followup.
ANTIBIOTIC PREMEDICATION INDICATIONS

1. Prosthetic heart valves - (see separate protocol published in JAMA - June 1997)
2. Heart murmurs, e.g. MVP (with incompetence) and history of RF, RHD.
3. Patients with congenital heart disease.
4. Dialysis patients - those with A-V shunts and those on CAPD - peritoneal dialysis
5. Organ transplant patients, pre-and post transplant - depends on “counts”
6. Chemotherapy patients, including bone marrow transplant - depends on “counts”
7. Artificial joint patients (see separate protocol established in JADA - July 1997.
8. Poorly controlled diabetic patients.
9. Radiation therapy patients, depending on procedure.
10. Down syndrome patients (many have cardiac defects).
11. Immunosuppressed patients (depending on treatment).

NOTE:

The above list is only intended to raise the question of possible need for antibiotic prophylaxis and is not inclusive. Specific patient considerations need to be used to guide the use of antibiotic therapy.
Prevention of Bacterial Endocarditis

The American Heart Association has issued new guidelines for the prevention of bacterial endocarditis. These guidelines are published in the June 11, 1997 issue of the Journal of the American Medical Association (JAMA vol 277, pp1794-1801) and the July 1, 1997 issue of Circulation. They will also be published in an upcoming issue of the Journal of the American Dental Association. A summary of the new recommendations is listed below. The full statement will be available here in the near future.

The statement was prepared by an ad hoc writing group appointed by the American Heart Association with liaison members representing the American Dental Association, the Infectious Diseases Society of America, the American Academy of Pediatrics, and the American Society for Gastrointestinal Endoscopy. The authors are: Adnan S. Dajani, MD (Chairman); Kathryn A. Taubert, PhD; Walter Wilson, MD; Ann F. Bolger, MD; Arnold Bayer, MD; Patricia Ferrieri, MD; Michael H. Gewitz, MD; Stanford T. Shulman, MD; Soraya Nouri, MD; Jane W. Newburger, MD; Cecelia Hutto, MD; Thomas J. Pallasch, DDS, MS (liaison, American Dental Association); Tommy W. Gage, DDS, PhD (liaison, American Dental Association); Matthew E. Levison, MD (liaison, Infectious Diseases Society of America); Georges Peter, MD (liaison, American Academy of Pediatrics); Gregory Zuccaro, MD (liaison, American Society for Gastrointestinal Endoscopy).

The recommendations reflect analyses of relevant literature regarding procedure-related endocarditis, in vitro susceptibility data of pathogens causing endocarditis, results of prophylactic studies in animal models of endocarditis, and retrospective analyses of human endocarditis cases in terms of antibiotic prophylaxis usage patterns and apparent prophylaxis failures.

The guidelines are meant to aid practitioners, but are not intended as the standard of care or as a substitute for clinical judgment. The recommendations were formulated by the writing group after specific therapeutic regimens were discussed. The consensus statement was subsequently reviewed by outside experts not affiliated with the writing group and by the Science Advisory and Coordinating Committee of the American Heart Association.

Major changes in the updated recommendations include the following: a) emphasis that most cases of endocarditis are not attributable to an invasive procedure; b) cardiac conditions are stratified into high, moderate, and negligible risk categories based on potential outcome if endocarditis develops; c) procedures that may cause bacteremia and for which prophylaxis is recommended are more clearly specified; d) an algorithm was developed to more clearly define when prophylaxis is recommended for patients with mitral valve prolapse; e) for oral/dental procedures the initial amoxicillin dose is reduced to 2 g, a follow-up antibiotic dose is no longer recommended, erythromycin is no longer recommended for penicillin-allergic individuals but clindamycin and other alternatives are offered; f) for GI/GU procedures, the prophylactic regimens have been simplified. These changes were instituted to more clearly define when prophylaxis is/is not recommended, improve practitioner and patient compliance, reduce cost and potential GI side-effects, and approach more uniform world-wide recommendations.

TABLE 1. CARDIAC CONDITIONS FOR WHICH PROPHYLAXIS IS OR IS NOT
RECOMMENDED

Endocarditis Prophylaxis Recommended

High Risk Category

Prosthetic cardiac valves, including bioprosthetic and homograft valves
Previous bacterial endocarditis
Complex cyanotic congenital heart disease (e.g. single ventricle states, transposition of the great arteries, tetralogy of Fallot)
Surgically constructed systemic-pulmonary shunts or conduits

Moderate Risk Category

Most other congenital cardiac malformations (other than above and below)
Acquired valvar dysfunction (e.g., rheumatic heart disease)
Hypertrophic cardiomyopathy
Mitral valve prolapse with valvar regurgitation and/or thickened leaflets

Endocarditis Prophylaxis Not Recommended

Negligible Risk Category (No Greater Risk than the General Population)

Isolated secundum atrial septal defect
Surgical repair of atrial septal defect, ventricular septal defect, or patent ductus arteriosus (without residua beyond 6 mo)
Previous coronary artery bypass graft surgery
Mitral valve prolapse without valvar regurgitation
Physiologic, functional, or innocent heart murmurs
Previous Kawasaki disease without valvar dysfunction
Previous rheumatic fever without valvar dysfunction
Cardiac pacemakers (intravascular and epicardial) and implanted defibrillators
**TABLE 2. DENTAL PROCEDURES FOR WHICH PROPHYLAXIS IS OR IS NOT RECOMMENDED**

### Endocarditis Prophylaxis Recommended*

- Dental extractions
- Periodontal procedures including surgery, scaling and root planing, probing, recall maintenance
- Dental implant placement and reimplantation of avulsed teeth
- Endodontic (root canal) instrumentation or surgery only beyond the apex
- Subgingival placement of antibiotic fibers/strips
- Initial placement of orthodontic bands but not brackets
- Intraligamentary local anesthetic injections
- Prophylactic cleaning of teeth or implants where bleeding is anticipated

### Endocarditis Prophylaxis Not Recommended

- Restorative dentistry^ (operative and prosthodontic) with/without retraction cord#
- Local anesthetic injections (nonintraligamentary)
- Intracanal endodontic treatment; post placement and buildup
- Placement of rubber dams
- Postoperative suture removal
- Placement of removable prosthodontic/orthodontic appliances
- Electrosurgery after postoperative suture removal
- Taking of oral impressions
- Fluoride treatments
- Taking of oral radiographs
- Orthodontic appliance adjustment
- Shedding of primary teeth

* Prophylaxis is recommended for patients with high and moderate risk cardiac conditions.

^ This includes restoration of decayed teeth (filling cavities) and replacement of missing teeth

# Clinical judgment may indicate antibiotic use in selected circumstances that may create significant bleeding.
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Endocarditis Prophylaxis Recommended</th>
<th>Endocarditis Prophylaxis Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respiratory Tract</strong></td>
<td>Tonsillectomy and/or adenoidectomy&lt;br&gt;Surgical operations that involve respiratory mucosa&lt;br&gt;Bronchoscopy with a rigid bronchoscope</td>
<td>Endotracheal intubation&lt;br&gt;Bronchoscopy with a flexible bronchoscope, with or without biopsy#&lt;br&gt;Tympanostomy tube insertion</td>
</tr>
<tr>
<td><strong>Gastrointestinal Tract</strong></td>
<td>Sclerotherapy for esophageal varices&lt;br&gt;Esophageal stricture dilation&lt;br&gt;Endoscopic retrograde cholangiography with biliary obstruction&lt;br&gt;Biliary tract surgery&lt;br&gt;Surgical operations that involve intestinal mucosa</td>
<td>Transesophageal echocardiography#&lt;br&gt;Endoscopy with or without gastrointestinal biopsy#</td>
</tr>
<tr>
<td><strong>Genitourinary Tract</strong></td>
<td>Prostatic surgery&lt;br&gt;Cystoscopy&lt;br&gt;Urethral dilation</td>
<td>Vaginal hysterectomy#&lt;br&gt;Vaginal delivery#&lt;br&gt;Cesarean section&lt;br&gt;In uninfected tissue: urethral catheterization</td>
</tr>
</tbody>
</table>
uterine dilatation and curettage
therapeutic abortion
sterilization procedures
insertion or removal of intrauterine devices

Other

Cardiac catheterization, including balloon angioplasty
Implantation of cardiac pacemakers, implanted defibrillators, and coronary stents
Incision or biopsy of surgically scrubbed skin
Circumcision

* Prophylaxis is recommended for high-risk patients; optional for medium-risk patients.

# Prophylaxis is optional for high-risk patients.
TABLE 4. PROPHYLACTIC REGIMENS FOR DENTAL, ORAL, RESPIRATORY TRACT, OR ESOPHAGEAL PROCEDURES (NO FOLLOW-UP DOSE RECOMMENDED)

<table>
<thead>
<tr>
<th>Situation</th>
<th>Agent</th>
<th>Regimen#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard general prophylaxis:</td>
<td>Amoxicillin</td>
<td>Adults: 2.0 g; Children: 50 mg/kg PO 1 hour before procedure</td>
</tr>
<tr>
<td>Unable to take medications:</td>
<td>Ampicillin</td>
<td>Adults: 2.0 g IM or IV Children: 50 mg/kg IM or IV within 30 minutes before procedure</td>
</tr>
<tr>
<td>Penicillin-allergic:</td>
<td>Clindamycin</td>
<td>Adults: 600 mg; Children: 20 mg/kg PO 1 hour before procedure</td>
</tr>
<tr>
<td>Penicillin-allergic and unable to take medications:</td>
<td>Clindamycin</td>
<td>Adults: 600 mg; Children: 20 mg/kg IV within 30 minutes before oral procedure</td>
</tr>
<tr>
<td>Penicillin-allergic and unable to take medications:</td>
<td>Cefazolin*</td>
<td>Adults: 1.0 g; Children: 25 mg/kg IM or IV within 30 minutes before procedure</td>
</tr>
</tbody>
</table>

# Total children's dose should not exceed adult dose.

* Cephalosporins should not be used in individuals with immediate type hypersensitivity reaction (urticaria, angioedema, or anaphylaxis) to penicillins.

TABLE 5. PROPHYLACTIC REGIMENS FOR GENITOURINARY/GASTROINTESTINAL (EXCLUDING ESOPHAGEAL) PROCEDURES
<table>
<thead>
<tr>
<th>Situation</th>
<th>Agent(s)*</th>
<th>Regimen#</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-risk patients</td>
<td>Ampicillin</td>
<td>Adults: ampicillin 2.0 plus</td>
</tr>
<tr>
<td></td>
<td>Gentamycin</td>
<td>gentamycin 1.5 mg/kg IM/IV (not to exceed 120 mg) within 30 min of starting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the procedure. Six hours later, ampicillin 1 g IM/IV or amoxicillin 1g PO.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Children: ampicillin 50 mg/kg IM or IV (not to exceed 2.0 gm) plus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>gentamicin 1.5 mg/kg within 30 minutes of starting the procedure. Six</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hours later, ampicillin 25 mg/kg IM/IV or amoxicillin 25 mg/kg PO.</td>
</tr>
<tr>
<td>High-risk patients</td>
<td>Vancomycin</td>
<td>Adults: vancomycin 1.0 IV over 1-2 hours plus gentamicin 1.5 mg/kg IV/IM</td>
</tr>
<tr>
<td>allergic to</td>
<td>plus Gentamicin</td>
<td>(not to exceed 120 mg)</td>
</tr>
<tr>
<td>ampicillin/amoxicillin:</td>
<td></td>
<td>Complete injection/infusion within 30 minutes of starting the procedure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Children: vancomycin 20 mg/kg IV over 1-2 hours plus gentamicin 1.5 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV/IM. Complete the injection/infusion within 30 minutes of starting the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>procedure.</td>
</tr>
<tr>
<td>Moderate-risk patients</td>
<td>Amoxicillin</td>
<td>Adults: amoxicillin 2.0 gm PO 1 hour before procedure</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td>OR ampicillin 2.0 gm IM/IV within 30 minutes of starting the procedure.</td>
</tr>
<tr>
<td>OR</td>
<td>Ampicillin</td>
<td>Children: amoxicillin 50 mg/kg PO 1 hour before procedure,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR Ampicillin 50 mg/kg IM/IV within 30 minutes of starting the procedure.</td>
</tr>
<tr>
<td>Moderate-risk patients</td>
<td>Vancomycin</td>
<td>Adults: vancomycin 1.0 gm IV over 1-2 hours. Complete infusion</td>
</tr>
<tr>
<td>allergic to</td>
<td></td>
<td>within 30 minutes of starting the procedure.</td>
</tr>
<tr>
<td>ampicillin/amoxicillin:</td>
<td></td>
<td>Children: vancomycin 20 mg/kg IV over 1-2 hours. Complete infusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>within 30 minutes of starting the procedure.</td>
</tr>
</tbody>
</table>

# Total children's dose should not exceed adult dose.

* No second dose of vancomycin or gentamicin is recommended.
Advisory Statement Antibiotic Prophylaxis for Dental Patients with Total Joint Replacements

American Dental Association; American Academy of Orthopaedic Surgeons

ABSTRACT

An expert panel of dentists, orthopaedicsurgeons, and infectious disease specialists, convened by the American Dental Association and the American Academy of Orthopaedic Surgeons, or AAOS, performed a thorough review of all available data to determine the need for antibiotic prophylaxis to prevent hematogenous prosthetic joint infections in dental patients who have undergone total joint arthroplasties. The result is this report, which has been adopted by both organizations as an advisory statement. The panel's conclusion: Antibiotic prophylaxis is not indicated for dental patients with pins, plates and screws, nor is it routinely indicted for most dental patients with total joint replacements. However, it is advisable to consider premedication in a small number of patients (Table 1) who may be at potential increased risk of hematogenous total joint infection.

Approximately 450,000 total joint arthroplasties are performed annually in the United States. Deep infections of these total joint replacements usually result in failure of the initial operation and the need for extensive revision. Due to the use of perioperative antibiotic prophylaxis and other technical advances, deep infection occurring in the immediate postoperative period resulting from intraoperative contamination has been markedly reduced in the past 20 years.

Patients who are about to have a total joint arthroplasty should be in good dental health prior to surgery and should be encouraged to seek professional dental care if necessary. Patients who already have had a total joint arthroplasty should perform effective daily oral hygiene procedures to remove plaque (e.g., manual or powered toothbrushes, interdental cleaners, oral irrigators) to establish and maintain good oral health. The risk of bacteremia is far more substantial in a mouth with ongoing inflammation than in one that is healthy and employing these home-oral hygiene devices.

Bacteremias can cause hematogenous seeding of total joint implants, both in the early postoperative period and for many years following implantation. It appears that the most critical period is up to two years after joint placement. In addition, bacteremias may occur in the course of normal daily life and concurrently with dental and medical procedures. It is likely that many more oral bacteremias are spontaneously induced by daily events than are dental treatment-induced. Presently no scientific evidence supports the position that antibiotic prophylaxis to prevent hematogenous infections is required prior to dental treatment in patients with total joint prostheses. The risk/benefit and cost/effectiveness ratios fail to justify the administration of routine antibiotic prophylaxis. The analogy of late prosthetic joint infections with infective endocarditis is invalid as the anatomy, blood supply, microorganisms and mechanisms of infection are all different.

It is likely that bacteremias associated with acute infection in the oral cavity skin, respiratory, gastrointestinal and urogenital systems and or other sites can and do cause late implant infection. Any patient with a total joint prosthesis with acute orofacial infection should be vigorously treated
as any other patient with elimination of the source of the infection (incision and drainage, endodontics, extraction) and appropriate therapeutic antibiotics when indicated. Practitioners should maintain a high index of suspicion for any unusual signs and symptoms (e.g., fever, swelling, pain, joint warm to touch) in patients with total joint prostheses.

Antibiotic prophylaxis is not indicated for dental patients with pins, plates and screws, nor is it routinely indicated for most dental patients with total joint replacements. This position agrees with that taken by the Council on Dental Therapeutics, the American Academy of Oral Medicine, and is similar to that taken by the British Society for Antimicrobial Chemotherapy. There is limited evidence that some immunocompromised patients with total joint replacements (Table 1) may be at higher risk for hematogenous infections. Antibiotic prophylaxis for such patients undergoing dental procedures with a higher bacteremic incidence (as defined in Table 2), should be considered using an empirical regimen (Table 3). In addition, antibiotic prophylaxis may be considered when the higher bacteremic incidence dental procedures (as defined in Table 2) are performed on dental patients within 2 years post implant surgery, on those who have had previous prosthetic joint infections, and on those with some other conditions. (Table 1).

Occasionally, a patient with a total joint prosthesis may present to the dentist with a recommendation from his/her physician that is not consistent with these guidelines. This could be due to lack of familiarity with the guidelines or to special considerations about the patient's medical condition which are not known to the dentist. In this situation, the dentist is encouraged to consult with the physician to determine if there are any special considerations that might affect the dentist's decision on whether or not to premedicate, and may wish to share a copy of these guidelines with the physician, if appropriate. After this consultation, the dentist may decide to follow the physician's recommendation, or if in the dentist's professional judgment, antibiotic prophylaxis is not indicated, may decide to proceed without antibiotic prophylaxis. The dentist is ultimately responsible for making treatment recommendations for his/her patients based on the dentist's professional judgment. Any perceived potential benefit of antibiotic prophylaxis must be weighed against the known risks of antibiotic toxicity; allergy; and development, selection and transmission of microbial resistance.

This statement provides guidelines to supplement practitioners in their clinical judgment regarding antibiotic prophylaxis for dental patients with a total joint prosthesis. It is not intended as the standard of care nor as a substitute for clinical judgment as it is impossible to make recommendations for all conceivable clinical situations in which bacteremias originating from the oral cavity may occur. Practitioners must exercise their own clinical judgment in determining whether or not antibiotic prophylaxis is appropriate.

See also A Legal Perspective on Antibiotic Prophylaxis
Table 1. Patients at Potential Increased Risk of Hematogenous Total Joint Infection

**Immunocompromised/immunosuppressed patients**
- Inflammatory arthropathies: rheumatoid arthritis, systemic lupus erythematosus
- Disease, drug or radiation-induced immunosuppression

**Other Patients**
- Insulin-dependent (Type 1) diabetes
- First two years following joint placement
- Previous prosthetic joint infections
- Malnourishment
- Hemophilia

Table 2. Incidence Stratification of Bacteremic Dental Procedures *

**HIGHER INCIDENCE (1)**
- Dental extractions
- Periodontal procedures including surgery, subgingival placement of antibiotic fibers/strips, scaling and root planing, probing, recall maintenance
- Dental implant placement and reimplantation of avulsed teeth
- Endodontic (root canal) instrumentation or surgery only beyond the apex
- Initial placement of orthodontic bands but not brackets
- Intraligamentary local anesthetic injections
- Prophylactic cleaning of teeth or implants where bleeding is anticipated

**LOWER INCIDENCE (2)**
- Restorative dentistry (3) (operative and prosthodontic) with/without retraction cord
- Local anesthetic injections (nonintraligamentary)
- Intracanal endodontic treatment; post placement and buildup
- Placement of rubber dam
- Postoperative suture removal
- Placement of removable prosthodontic/orthodontic appliances
- Taking of oral impressions
- Fluoride treatments
- Taking of oral radiographs
- Orthodontic appliance adjustment

**NOTES:**
1. Prophylaxis should be considered for patients with total joint replacement that meet the criteria in Table 1. No other patients with orthopedic implants should be considered for antibiotic prophylaxis prior to dental treatment/procedures.
2. Prophylaxis not indicated.
3. This includes restoration of carious (decayed) or missing teeth.
4. Clinical judgment may indicate antibiotic use in selected circumstances that may create significant bleeding.

*Adapted from Dajani and colleagues.22 Reprinted with permission of the Journal of the American Medical Association.

Table 3. Suggested antibiotic prophylaxis regimens *

Patients not allergic to penicillin: cephalexin, cephradine or amoxicillin
2 grams orally 1 hour prior to dental procedure.
Patients not allergic to penicillin and unable to take oral medications: cefazolin or ampicillin
Cefazolin 1 gram or ampicillin 2 grams intramuscularly or intravenously 1 hour prior to the dental procedure
Patients allergic to penicillin: clindamycin
600 mg orally 1 hour prior to the dental procedure.
Patients allergic to penicillin and unable to take oral medications: clindamycin
600 mg IV 1 hour prior to the dental procedure.

*No second doses are recommended for any of these dosing regimens.

FOOTNOTES
11. Bartzokas CA, Johnson R, Jane M, Martin MV, Pearce PK, Saw Y. Relation between mouth and


MANAGEMENT OF THE JOINT PATIENT WITH EXISTING INFECTIONS

Prosthetic joint infections arising as a result of established infections in other sites of the body is more likely than prosthetic joint infection from transient bacteremia. It is clear that odontogenic infections have resulted in infection of prosthetic hips. When patients with prosthetic joints are diagnosed as having odontogenic infections, the infection should be treated aggressively, with good surgical drainage, removal of the offending teeth, and the administration of bactericidal antibiotics. In some situations, this may require the administration of combination antibiotic therapy, such as penicillin and metronidazole. Bacteriostatic antibiotics such as erythromycin should not be used in this situation.
SAMPLE CONSULTATION LETTER PROSTHETIC JOINT PROPHYLAXIS

Date____________________

Dear Dr.____________________,

I am writing concerning your patient,________________________ who has presented for dental treatment to the Advanced General Dentistry/General Practice Residency Clinic here at OSU. We noted in the medical history that this individual has a prosthetic joint. Naturally, the concern at this point is for the prevention of a hematogenous spread of bacteria to the prosthetic joint.

In keeping with the recommendations of the American Dental Association the American Academy of Orthpaedic Surgeons, the College of Dentistry has adopted a policy of antibiotic prophylaxis for these patients when dental surgical procedures are performed. The regimen which we recommend is found in the July 1997 issue of the Journal of American Dental Association.

We recommend the use of a broader spectrum antibiotic than penicillin according to the following protocols:

Regimen A (normal regimen)
Pre-op Amoxicillin 2 gm 1 hour prior to surgery

Regimen B (penicillin allergic patient)
Pre-op Clindamycin 600 mg 1 hour prior to surgery

We have had wide acceptance of this regimen in the orthopedic community in Columbus. If this regimen is consistent with your recommendations, would you please sign this letter and return it to me (or send a separate letter of confirmation).

If you wish to recommend an alternative regimen, please indicate what you would prefer in a separate letter or on this letter, then sign and return it to me at the above address.

Thank you for your interest and assistance with this important issue.

Sincerely,

__________________, DDS/DMD

CONFIRMATION

_____Your protocol is satisfactory to me, please proceed as you planned.
_____I recommend the following antibiotic prophylaxis regimen:

___________________________________

Physician signature, date
CONSIDERATIONS IN THE CARDIAC PATIENT

A. Hypertension
   1. Normal blood pressure = 120/80
   2. Abnormal situations
      a. Diastolic
         i. < 85 - periodic biannual checks
         ii. 85-89 - recheck annually
         iii. 90-104 - confirm promptly, within 2 months
         iv. 105-115 - evaluate or refer promptly to physician, within 2 weeks, NO DENTAL TREATMENT
         v. > 115 - evaluate or refer immediately to physician, NO DENTAL TREATMENT
      b. Systolic
         i. < 140 - periodic biannual checks
         ii. 140-200 - confirm promptly, within 2 months LIMITED DENTAL TREATMENT
         iii. > 200 - evaluate or refer immediately to physician, NO DENTAL TREATMENT
   3. Common medication side effects
      a. Diuretics
         i. xerostomia
         ii. frequent urination
      b. Beta blockers
         i. postural hypotension

B. Stroke (CVA)
   1. side of body affected is contralateral to location in injury
   2. may affect speech, understanding, visual perception
   3. gag reflex may be compromised
   4. oral hygiene may be poor on affected side
   5. patient may be on anti-coagulants
   6. patient may have hypertension

C. Aneurysm (enlarged and weakened section of artery)
   1. possible associate hypertension
   2. patient may have synthetic graft repair, if so consult physician for antibiotic prophylaxis, if necessary.

D. Heart transplants
   1. no treatment within first six months (except emergency care)
   2. thorough dental evaluation and treatment prior to transplant.
   3. increased risk for infection due to immunosuppressive drug therapy
      a. increased candidiasis and herpes incidence
      c. antibiotic prophylaxis is indicated for surgical procedures, as well as
extended post-treatment antibiotics during healing
d. consider anti-coagulant medication
e. control stress, monitor vital signs, manage pain
f. use no epinephrine in the anesthetic (lacks vagal feed back, will not have sign of angina.

E. Pacemakers
1. consult physician, antibiotic prophylaxis may be indicated
2. take precautions with electronic devices, such as microwaves and cavitrons
3. should avoid epinephrine

F. Central venous lines (includes Hickman or Broviac catheters commonly used for chemotherapy patients)
1. will require antibiotic prophylaxis
2. consult physician before any treatment
3. never use central line for IV sedation or medication administration except in emergency

G. Coronary artery bypass grafts (CABG - pronounced "cabbage")
1. avoid routine dental treatment for the first six months after surgery, do only emergency dental care.
2. antibiotic prophylaxis usually needed only during these first six months, consult physician
3. routine treatment after 6 months
4. check for medication side effects and interactions
5. generally avoid epinephrine

H. Artificial heart valves (synthetic or porcine)
1. antibiotic prophylaxis with parenteral antibiotics, always consult physician first
2. greatly increased risk for endocarditis
3. usually on an anticoagulant
4. stress importance of oral hygiene and regular dental care to avoid infections that might lead to endocarditis

I. Deep vein thrombosis
1. usually hospitalized on anticoagulants

J. Angina
1. avoid the use of epinephrine
2. may need nitroglycerine sublingual or spray (.15-.6 mg+) (may give electively pre-operatively)
3. may be on anti-coagulants
4. monitor vital signs
5. decrease stress and pain
6. physician consult may be indicated if unstable

K. Congestive heart failure
   1. keep appointments short
   2. watch position of chair, usually no more than 45 degree recline
   3. xerostomia may be present due to medications
   4. decrease stress and pain

L. Medications of concern
   1. Warfarin (Coumadin): anticoagulant, check pro-time (desired maximum level 18-20 seconds) (INR should be under 2.5)
   2. Aspirin: decreases platelet aggregation, check bleeding time
   3. Persantine: decreases platelet aggregation, check bleeding time
   4. Heparin: anticoagulant, check PTT (desired maximum level 45-50 seconds)

M. Basic rules for the cardiac patient
   1. Medically:
      a. consult physician
      b. obtain good health history
      c. obtain accurate medication history
      d. monitor vital signs each visit
      e. antibiotic coverage when needed
      f. minimize stress and pain
   2. Dentally:
      a. control pain and infection
      b. maximize oral hygiene abilities
      c. evaluate for anticoagulant medications
      d. manage xerostomia