



3. DEVELOPING A PHASE 1 TREATMENT PLAN

Learning Objectives

- 1. Explain the goals for Phase 1 and be able to recognize which treatments might be appropriate for Phase 1.
- 2. Be able to explain space infections, what influences their location, the sequence of treatment, and why Ludwig's Angina and Parapharyngeal space infections are a significant threat.
- 3. List when antibiotics are indicated and when they are not indicated.
- 4. List and clinically recognize the three treatment planning indications for considering an orthodontic evaluation. Recognize when a case has adequate disease control for treatment.
- 5. Define how to determine restorability and list the sequence of restorative and endodontic treatment.
- 6. List the key elements of a specialty consult. Be able to recognize and correct defects in a poorly written consult.



Additionally, all concepts in **blue** or marked with a **key** deserve special attention.

Data Collection \rightarrow Tx Plan

We've developed a Problem and Diagnosis List, and have some sense for what kind of treatment this patient is interested in both tooth by tooth and overall. Now we need to start to develop our Treatment Plan



Phase 3

Simple

Phase 3

Includes Fixed

Pros

Approve at DXR*

Overview of Phases Prep Surgery Periodontal Answer Disease questions Restore form, function, esthetics Anterior **Provisional esthetics** Non-Caries vital pulp Pain Bleeding Swelling Phase 2. Phase 1. Phase 3. **Disease Control** Urgent & Diagnostic Rehabilitation Preparatory

Phase 1 Goals

- The concept behind Phase 1 is that certain treatments need to be separated out for **priority attention**.
- But intellectually, this can be a slippery slope: what should be included for first attention? Here are three broad categories of treatments:
 - **Urgent care.** Managing a patient in **pain**, with an **acute infection**, or doing a biopsy of a suspicious lesion.
 - Esthetic "emergency". For some patients, losing a front tooth can be an emergency, especially if they can't go to work without it!
 - Answering questions. Where there are questions that stop the treatment planning process, they go into Phase 1 so that issues are clarified prior to starting Phase 2. This includes medical consults and specialty consults like Endo, Perio, Ortho.

Review

Phase 1: Urgent

Urgent Treatment: • Space Infections

Space Infections Acute Periodontal

Infections

Phase 1. Urgent

- Let's start with urgent. It's easy to define: Pain. Bleeding. Swelling. Infections. But also giving a patient a front tooth so they can go to work can be urgent.
- We've covered diagnosing tooth pain already, and you will learn options for that missing front tooth in Prosthodontics.
 Bleeding (like from trauma) will be handled in Oral Surgery.
- What about acute infections and swelling? Usually swelling means an infection.



Phase 1

Urgent

Red Flags

- Any of these symptoms should make you sit up and pay attention!
 - Fever
 - Swelling
 - Trouble swallowing
 - Trouble breathing
 - Trismus
- If you can't find the origin of the problem, or are not sure you have solved the problem, get the patient to someone who can (ie an Oral Surgeon)!
- Follow these patients! Call them even if they don't come back to the clinic.



Phase 1

Urgent

Sources of Infection

1.Caries can allow bacteria to enter the pulp, which then gives access for bacteria to form a periapical abscess in the periapical bone



2. Periodontal disease causes progressively deeper pockets next to the tooth. If unable to drain, the pocket can become blocked and become an acute periodontal abscess.

From either source, the bacteria can get into deeper tissues and become a space infection.

Phase 1. Urgent

Space Infections

General concepts on management:

- Once the infection is out into the fascial spaces, just starting endo or removing the tooth is not enough.
 - 1. First, the space infection must be managed
 - Then the original problem (endo, 3rd molar, etc) is addressed.
- "Pus must pass" an incision must be made into the infected area and a drain put in.
- Generally, these should be managed by an Oral and Maxillofacial Surgeon. Make friends with one—you can really learn a lot from them!



Phase 1

Urgent

And a third major source is third molars, which you remember can cause pericoronitis.



Applied Head and Neck

Let's put your Head and Neck Anatomy classes to practical use!

This is a drawing I made to help visualize and remember space infections.

Key concepts:

- Infections usually start from the apex of an abscessed tooth or pericoronitis on a 3rd molar.

- Drainage direction and structure location (like muscle origin and insertion) determine which space is infected.

-Some of the spaces are connectedinfection can flow around. Life-threatening: Ludwig's Angina is bilateral submental, sublingual, and submandibular, pushing the tongue into the airway space. Parapharyngeal space can go into the neck spaces which blocks off the airway. Both of these can compromise the airway and are life-threatening.

- There are only 10 of these spaces, and if you think about where the muscles are and how they relate to the teeth, you can have a pretty good guess of which space is which.



Case 1. Suzanne



Phase 1



This patient remembers having a bad toothache "a month or two ago" and then a dull ache that started about 5 days ago. Two days ago she woke up with a swelling which has rapidly worsened to this condition. The swelling is relatively hard with a soft fluctuant central area. She has a temp of 101.2.

Which space is this most likely to be?

- a Submandibular
- b Submental
- c Sublingual
- Which tooth is most likely to be the origin?





#31

Indications for Antibiotics

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Phase 1 Urgent

Not indicated:	Indicated for:
Pulpitis	Persistent infections
Necrotic pulp + radiolucency Apical periodontitis Sinus tract	Systemic illness: Temp >100, Malaise, Lymphadenopathy
Localized, fluctuant swelling (may need to be drained, but still may not need AB's)	Progressive infection: Trismus, Cellulitis, Increasing swelling
"I don't have time to take that tooth out or start a root canal today, so I'll give you this to hold you till I can get you in."	Osteomyelitis (OMFS referral!)
"I'd feel more comfortable if you took some antibiotics"	
The patient wants a	

While we're talking about this, let's make sure you understand when antibiotics work and **when they** *don't* **work**.

- Antibiotics are still hugely overprescribed for many things, dentistry among them.
- The idea that antibiotics will help control pain in pulpitis or periapical inflammation has been disproven in study after study but many dentists still stubbornly cling to the belief, even when confronted with the evidence.

Don't be that guy.



JK Mitchell, DDS

prescription for something...

Understanding Pain Management

- You will take your **Pharmacology** course in the Junior year, but in the meantime, here is the basic plan for dealing with pain.
- Over the counter medications are quite effective for mild-moderate pain. We've got research. Reassure your patient confidence works.
- Ibuprofen is dose-dependant. It is a good pain reliever at lower doses:
 - 400 mg every 4 hours (q4h)
 - 600 mg every 6 hours (gid)
 - But for it to be **anti-inflammatory**, it needs to be the highest dose:
 - 800 mg every 8 hours (tid)

And Ibuprofen has a **very slow onset** of relief (40 minutes). Start pts on it before anesthetic wears off, and have them take it by the clock instead of waiting until they hurt.

Mild



- Aspirin
- Tylenol
- Ibuprofen 400mg, 600 mg

Phase 1

Urgent



Moderate

- Ibuprofen 800 mg three times a day (tid) by the clock
- Consider adding narcotics



Severe

- Mod + breakthrough med:
- Narcotics q4h as needed



Case 1. Suzanne

Phase 1 Urgent



Suzanne is an otherwise healthy patient with no allergies to any medications.

You take a radiograph and see this image. The patient wishes to save the tooth. What do you do?



Start a non-surgical root canal treatment a (endo) and drain through the access, start antibiotics.



Incise and drain the abscess surgically, place a drain, and when the acute infection is resolved start endo.

C Incise and drain the abscess surgically, place a drain and start endo the same day to remove the source of the infection.

After the procedure, what will you prescribe/recommend?

Antibiotics



Over the counter pain medications



Narcotic pain medications

Urgent: Acute Periodontal Infections

Phase 1 Urgent

- Remember learning about an acute periodontal abscess? Those are the kind with an obvious swollen area and can be associate with chronic periodontal disease that becomes acute, or by a specific irritant like a popcorn kernel.
- There is **another kind of periodontal disease** that is quite painful. It used to be called "trench mouth" because it was common in the trenches in WWI. They thought it was an infectious disease, but actually the common factor was getting shot at (stress) and eating canned food (poor nutrition).
- It was common again in the early days of HIV before current medications were available. Now you can see it on college campuses during finals (stress + cold pizza, anyone?) or boot camps or in anyone who is stressed. It's called Necrotizing Ulcerative Periodontitis (NUP).
- The bacteria invade the gingival papilla causing rapid loss of papilla, bone, and attachment mechanism. It has a classic grayish slimy "pseudomenbrane" and "punched out" papillae and a really vile smell that you will never forget once you have gotten a whiff. Characteristically, it tends to attack first molars and mandibular anterior molars.
- **Treatment?** Sleep, good nutrition, and good oral hygiene as well as antibiotics.

"Pseudomembrane"



Scratch n' sniff for characteristic odor

Urgent: Biopsy Suspicious Lesions

Phase 1 Urgent



- Any suspicious lesions should be followed for no more than
 2 weeks. If they have not healed significantly by then, a referral to a specialist is appropriate.
- It is your responsibility to develop a system to follow and recall these patients!
- Referrals may be appropriate to an Oral Pathologist, Oral Medicine specialist, an Oral Surgeon or a Periodontist all are experienced in soft tissue lesions and biopsy.

England

How about a nice quiet afternoon in Chipping Campden (Chipping = market, Campa-denu= valley in Saxon) in the Cotswolds. Looks like something out of *Peter Rabbit*. Or *The Hobbit*.

This region—also known as the shires—has a rich sheep farming history that was the basis of their wealth in the medieval heyday of wool. It was grown here, sold at fairs in France and turned into cloth in Italy (especially Florence) and Flanders (Belgium).

The Prime Minister still sits on a woolsack to remember how important the wool trade is to England's prosperity.

Break Time!







These guys are Morris dancers, a traditional style of dancing that involves little bells, ribbons, and waving handkerchiefs. Traditional thatched roofs are picturesque, as are the "wool churches", which date back to the 13th-16th C when the area was wealthy. After that, cotton began to be imported first from India, then from the South, ruining the market for more expensive wool. Whenever a region goes from wealth to relative poverty, there isn't enough money to replace the old styles with the new fashions, so this region has become a medieval time capsule.





Phase 1: Problem Solving

Problem Solving: •

- Medical
- Biopsy Oral Lesions
- Restorability
- Periodontics
- Endodontics
- Implants
- Orthodontics

Phase 1. Problem Solving

Phase 1 Problem Solving



Let's look at #19

Let's assume that we would really like to keep #19 for the treatment plan. So what are you thinking....

- 1. Does it need endo?
- 2. Is it restorable?

- Problem solving is a harder concept, and we need to spend some time on this one.
- Let's look at the kinds of questions we might be asking:
 - Is that soft tissue lesion anything we should worry about?
 - Is this tooth restorable?
 - Does the endo need to be redone before I put a crown on it?
 - Can I plan implants for that space? How many will I need?
 - Should we do ortho first?

Answer Medical Questions

- As you were taught in Oral Medicine, you are the besttrained person to know the parameters for dental care.
- But if there are issues in the medical history that require clarification or testing, the time to get the answers you need is before you start treatment.



Phase 1

Problem Solving

Is this tooth restorable?

- Let's get to the **bottom line**: You generally can't tell from a radiograph or even clinically if a tooth is restorable or not if it's borderline.
- What works? Remove the caries and see if you can get a matrix band on it. If you can get a matrix band on it, then you can restore it.

Crucial concept: you must determine if the tooth is restorable before you do endo. Why?

1. Sequencing correctly keeps you from the **embarrassment** (!) of extracting a tooth you just did a root canal on.

Let's say you don't plan, and after the endo you find out the tooth is NOT restorable! Ouch! (Pull out your checkbook...)

- 2. A good restoration helps to hold on the **rubber dam retainer.**
- 3. With a good restoration in place, you can better control the sodium hypochlorite (bleach) irrigant used in the root canal procedure—it won't leak out through the deep cavity if there's a nice restoration in it.



Sure Endo can do a root canal on this tooth. But then can it be restored?

Don't assume so... need to find out **first by** excavating caries and attempting to restore!

Not only do you *know*, but then isolation is better and easier for Endo, and the irrigant won't leak out.



Periodontics

Phase 1 Problem Solving



- If you find that your patient meets the criteria (*memorize them now...*) for disease on your initial exam:
- Schedule the patient for a periodontal consult, which is called a Comprehensive Periodontal Evaluation (D0180).
- This, like all consults, is usually a Phase 1 procedure.

Periodontics

- The question- Is tooth #7 savable periodontally? If so, what would be required?
- This patient would require a D0180 rather than just a prophy, right?
- Your perio exam will look at each tooth on its own, but also keep in mind your overall treatment plan, and what role this tooth might play.
- Are you thinking of using that tooth to support an FPD? An RPD? You might run that past the periodontist as part of the overall consideration.



Phase 1 Problem Solving

Endodontics

Phase 1 Problem Solving



What if you are thinking of putting crowns on these teeth for esthetics? Would you need to redo these endo txs first? It be smart to do that... I'd sure **ask an endodontist.**

What sorts of situations call for an endo referral?

- If the tooth is already endo treated *but*:
 - Is still symptomatic.
 - Has not been restored correctly and the endo fill itself (the gutta percha) has been exposed to saliva for more than 3-4 weeks. The oral bacteria have contaminated the endo fill and it should be evaluated for re-treatment.
 - The previous fill seems to have significant problems *and* you plan significant restorative treatment on it (ie, use as an RPD abutment).
- Any issues of pathosis in the chamber or periapical region, such as resorption or progressing calcification.

Implants

Phase 1 Problem Solving



• We will talk more about implants in a later tutorial, but for now let's say the patient is interested. Are implants a *feasible* option?

• The major questions are:

- Is there enough bone to support an implant?
- Is there enough space for the crown /FPD?
- Is the patient a good candidate health-wise and psychologically?
- You will go through patient services, who will assign them to one of three departments for an evaluation. (Oral Surgery, Perio, GPR)

Specialty Consults: Orthodontics

Phase 1 Problem Solving



This patient had a single large space between his centrals partly closed with composite. Imagine how BIG these teeth would be if veneers were placed on them in this position! But after ortho, the space was shared and the teeth could be sized normally for a nice result.

- Ortho- it's not just for kids any more!
- It can be quite helpful in setting up restorative care.
- You will learn more in your ortho class, but for now, consider ortho when dealing with:
 - Space or crowding issues if you're doing Fixed Pros
 - Implants! Once they are in, you can't move them, or the teeth around them. Think of ortho before you put in implants!

Orthodontic Adjunctive Care: Molar Uprighting

3. Tipped molar. Sometimes you want to use for an FPD abutment, but you can't prepare it correctly if it's tipped too far—you'll see why in Fixed Pros lab.

- But notice the center of rotation—a point in the center of the root.
- This usually means the crown rotates above the plane of occlusion—keep that in mind for your planning.
- Finally, ortho is NOT a fairy-dust answer: you can't just say "Oh, I'll have ortho move those teeth," without knowing that it is *feasible*. You have to move teeth where there is bone, for example. It's harder than it looks....

In this case, the tooth is well below the plane of occlusion, so after uprighting it will probably only need minor adjustment. But if it was at or above the plane, it would end up well above it and maybe unusable. Phase 1

Problem Solving

Adjunctive Orthodontic Care

BUT

- While the orthodontist will answer your referral, before they actually start the case (usually later in phase 2 or phase 3), they will need to know about the patient's disease status:
 - Is the patient caries active?
 - Does the patient have active perio disease?
- Why? Because Ortho treatment will aggravate both of these diseases and the patient will be worse off than if they had not had the treatment.
- You want to have a good working relationship with your referring orthodontists to get these diseases under control before placing appliances.
- More about that in Phase 2 and the Re-Evaluation tutorial.



Note the pattern of caries and white spot lesions around areas where the brackets were bonded, where the *S.Mutans*-laden plaque builds up. This is not the esthetic result orthodontists want to show on their websites! It's much harder to brush and floss around ortho appliances, too, so perio disease is a consideration.

> Back to Review

Writing a Specialty Consult

INTRODUCE YOUR PATIENT PERTINENT MEDICAL HISTORY KEY CLINICAL FINDINGS EXPLAIN CONTEXT "THE ASK"

Introduce your patient

- Basic demographic data "This 46 yo AA female..."
- Patient's original presenting concerns
 - "...presented for pain in #5 area..."
- History of present illness, if pertinent
 - "...which was treated with non-surgical root canal treatment in 1996."



No one knows your patient and their problems as well as you do. When you hand off care to another provider, make it as smooth, seamless, and professional as possible. *That means good information transfer*.

Pertinent Medical History

 $\mathbf{26}$



 List medical items of concern to the specialist with a brief synopsis of level of control

> "Pt is ASA Class II with Type II diabetes well controlled with diet and Metformin. HbA1C on (date) was 7.1."

Social/anxiety issues.

"Pt is very anxious and wishes to discuss sedation for any surgical procedures."

Key Clinical Findings

• Organize and lay out the key clinical findings of concern.

"Clinical exam of upper right shows normal soft tissue. Percussion, palpation all within normal limits except #5, which is sensitive to both. All perio probings similar to contralateral. Radiograph shows periapical radiolucency #5 (copy attached). Existing RCT is a silver point fill. No other radiographs available for comparison."



Explain Context

28



 Give a brief synopsis of your thinking or plans.
"This tooth is being considered as an abutment for either an FPD or RPD; however, if the prognosis is poor, the patient is open to extraction and placement of an implant."
The Ask...

2C

- Clearly state what you want from this patient encounter, either an opinion or a treatment.
 - "Please evaluate for whether the long-term prognosis of this tooth as an abutment would justify retreatment with endo, post and core, and full coverage. If so, please proceed with treatment."



Consults (Referral) in axiUm



Hang on. This is hard...

- 1. Go to Forms.
- 2. Click the folder with the green plus on the right.
- 3. Click on the Form options
- 4. Choose REFER
- 5. Click OK.

Referral: Choosing the "From"		
Note: Medical Alett:: Alergies: Alives: Alergies: Alergies: Alives: Durent Medicalon:: Dirace: PP2 Question Deballs - Additional Info FR0M JR CLNIC FOM JR CLNIC Margines: Fom Revide: Name 22 31 00 29 22 24 23 22 No projects: Televide: Name Provide: Name Provide: Name Provide: Name Provide: Televide: Name Provide: Name Provide: Name Provide: Name Provide: Televide: Name Provide: Name Provide: Name Provide: Name Provide: Televide: Alending Provide: Name Provide: Name Provide: Name Provide: Televide: Alending Provide: Name (Irst/Ast) Provide: Name Provide: Name Prom Decision Arsaver Provide: Name (Irst/Ast) Provide: Name Provide: Name Prom Decision Arsaver Provide: Name (Irst/Ast) Provide: Name Provide: Name Prom Decision Arsaver Provide: Name Provide: Name Provide: Name Provide: Name Prom Decision: Arsaver <td>Click on "From (Clinic-Provider)" and a list of clinics appears. Click on FROM JR CLINIC. It isn't necessary to add the faculty name since they sign the referral, unless someone else was the key instigator.</td>	Click on "From (Clinic-Provider)" and a list of clinics appears. Click on FROM JR CLINIC. It isn't necessary to add the faculty name since they sign the referral, unless someone else was the key instigator.	

"Reason for Request" Go-By

Now fill in the "REASON FOR REQUEST"

- This XX yo (race) (male/female) presents for (original concern). Medical history includes (concise evaluation of issues of significance to procedure considered).
- Clinical findings include (whatever led you to ask for a consult, ie, for Endo, a poor fill with radiolucency, percussion and palpation sensitivity; for OS, a non-restorable carious tooth or that tooth will be removed for restorative reasons; for Ortho, crowded lower anterior teeth; for Perio, a description of area/condition of concern). Advise of any special concerns or issues, esp. if sedation is a consideration.
- Current treatment options being considered include (explain your plans so the specialist understands the context for this treatment. Ex: placement of implants, restorative plan).
- Please evaluate and treat...; evaluate and advise if ... (If you do not want treatment performed at this time, say so....)



Now that you know the basics...

- Read Chapter 3 pg 53-65 (before occlusion): Developing the Treatment Plan
- *Skim* Chapter 6 pg 113-135: Acute Phase of Treatment. Gives you a very good overview of how to handle an emergency patient start to finish. Also has a good review of the pain material we covered last semester, but in more detail.

Review of Learning Objectives

If you have trouble with any of these, click on the link. Some cover several pages before the Return to Review button appears. Be sure you know all the terms in <u>blue</u> in the tutorial.

Explain the goals for Phase 1 and be able to recognize which treatments might be appropriate for Phase 1.

Be able to explain space infections, what influences their location, the sequence of treatment, and why Ludwig's Angina and Parapharyngeal space infections are a significant threat.

List when antibiotics are indicated and when they are not indicated.

List and clinically recognize the three treatment planning indications for considering an orthodontic evaluation. Recognize when a case is disease controlled for referral

Define how to determine restorability and list the sequence of restorative and endodontic treatment.

List the key elements of a specialty consult. Be able to correctly write a referral in axiUm. Recognize and correct defects in a poorly written referral.

3

5

6

Nice work!

St James Church Chipping Campden Finish

Case 1: You chose a "Submandibular Space"



Correct!

 You probably noticed that the swelling is on one side only (eliminating the unpaired Submental space which would be right in the middle) and that it is under the Mylohyoid muscle.

• Nice work!



Case 1: You chose b "Submental Space"



- Probably not.
- Check the diagram and try again!



Case 1: You chose c "Sublingual space"



- Probably not
- Check the diagram and try again!



Case 1: You chose a "#26"



- Probably not...
- Check the diagram and try again!



Case 1: You chose b "#29"



- Probably not.
- Check the diagram and try again!



Case 1: You chose c "#31"



Correct!

 You probably noted that the most likely tooth to be below the mylohyoid insertion is a second molar, so #31 is a likely option.

• Nice work!





Case 1. You chose a- Endo



- Not really the best choice.
- Read the slide on infections and try again!



You chose b.





I&D, delay endo - Correct!

 Of course you want to get the endo done as soon as you can, but generally patients like this will have trouble opening their mouths wide enough to work on and you will make them much more sore if you try to do it all at once.

Return

Good job!

Case 1. You chose c- I&D + Endo



- Not really the best choice.
- Read the slide on infections and try again!





Suzanne: You chose Antibiotics

Not indicated:	Indicated for:	
Pulpitis	Persistent infections	
Necrotic pulp + radiolucency Apical periodontitis Sinus tract	Systemic illness: Temp >100, Malaise, Lymphadenopathy	
Localized, fluctuant swelling ((may need to be drained, but still may not need AB's)	Progressive infection: Trismus, Cellulitis, Increasing swelling	
"I don't have time to take that tooth out or start a root canal today, so I'll give you this to hold you till I can get you in."	Osteomyelitis (OMFS referral!)	
"I'd feel more comfortable if you took some antibiotics"		
The patient wants a		

prescription for something...

YES!

- This is clearly a case for antibiotics. The patient has a fever and a progressing infection.
- Good choice, doctor!
- Keep clicking, though





Suzanne: You chose OTC Pain Meds

Good idea!

- Not because that is going to be enough for her pain after the I&D surgery (it won't be) but because it is antiinflammatory. You would give it at the highest dose:
 - 800 mg every 8 hours (tid)
- She will have less overall pain if the inflammation is controlled, not just the pain.
- Keep looking, though





Suzanne: You chose Narcotic Pain Meds

Of course.

- This woman is going to be in a lot of pain after we open up her neck, drain out a lot of pus, and put in a drain. This is *not* a fun day. Ibuprofen is *not* going to keep her comfortable.
- Patients need narcotics for this sort of pain, and you are wise to prescribe it in advance of the pain.
- Keep looking, though

