Throat Pain / Sore throat Scenario:

A 17-year-old male is being seen at an outpatient clinic for sore throat. He states that it is hard for him to swallow due to pain.

Using the Epi-logical approach, what should be the probable diagnoses?

The clinician can consider all differentials on the mind map. However, the fact that the patient has made it to the office, and is able to describe his symptoms, suggests that perhaps a serious life-threatening diagnosis is not likely. Also, this patient's age suggests that diphtheria is highly unlikely.

How should the clinician address urgent/emergent situations?

The patient is in no apparent distress, and his vitals are BP: 120/70, HR: 89 bpm, Temperature 102 F, Oxygen saturation is 99% and his BMI is 22. All these vitals are normal, except for his temperature. The clinician therefore determines that an urgent/emergent situation does not exist, at least at the moment. Now, it is still possible that this patient will turn out to have a life-threatening diagnosis, but his condition just has not progressed to the point yet where symptoms of such a diagnosis would be apparent (low oxygen saturation, changes in blood pressure, heart rate, stridor, and dysphagia and drooling, etc.).

Weighing and Removing Anchor Bias:

The clinician can start asking high yield and medium yield questions to increase or decrease the likelihood of several diagnoses. Below is a list of these questions, the patient's answers, and the weighing process.

The Clinician's Questions	**The Patient's Responses**	**How does this information help with the weighing process?**
When did you start noticing the pain?	It started a week ago after I came home from school and has gradually gotten worse	Pharyngitis (bacterial and viral) and tonsillitis are more likely. Herpetic lesions (older population) and Hyperangina (younger population) are somewhat less likely because of the patient's age
Where exactly is your pain?	All my throat hurts	This question may not be necessary, but it is always a good idea to confirm the location. Often a patients' understanding of anatomy is different. Also, occasionally patients may have pain in the roof of the mouth or oral mucosa, which have different sets of differentials than a sore throat
Do you have any cough?	No	Strep pharyngitis is likely and viral pharyngitis less likely. The patient's temperature

		also adds to the evidence in favor of strep pharyngitis
Did you notice any swelling or swollen glands in the neck area?	Yes, I feel that my neck glands are swollen	An infectious etiology is likely, but this information does not help change the likelihood among different infectious etiologies
Is there anyone else sick around you at home or at school?	My class size is quite large. So, most of the time someone is sick with one thing or another, but I didn't notice	This feature helps increase the likelihood of infectious etiologies if present, but does not decrease the likelihood if absent
At this point, the clinician has sufficient evidence for an infectious etiology for this patient's sore throat. Note that there are additional questions on the mind map which can be asked, but will probably not help with the diagnostic efficiency in this scenario. For example, asking about a physical or chemical injury will be helpful only if the patient complained about the unusual character and onset of pain (sudden pain after drinking hot liquids, etc.) Likewise, asking about the quality or character of pain will only be helpful if the patient had noticed an ulcer, and the pain was more localized. The clinician can now proceed to ask questions about diagnoses that were not being considered, to remove anchor bias.		
Sometimes a condition called "mono" can cause throat infection. It is quite common in your age group and is caused by a virus. The virus transmits after a close contact, such as kissing. Do you think this might have happened in your case?	Well, I guess it is possible. I have heard about mono, and I do have a girlfriend, but she was feeling fine. So, I didn't think that applied to me	This increases the likelihood of mono, although the patient's girlfriend did not feel sick, because not everyone becomes symptomatic with mono.
Do you have any trouble swallowing or opening your mouth?	I can open my mouth just fine and swallow, but it hurts	The rest of the REDPIL diagnoses are not likely
At this point, the most weight of evidence is for Tonsillitis, Strep Pharyngitis (sore throat, fever, enlarged lymph nodes, and absence of cough), and infectious mononucleosis. The clinician can proceed with a physical exam		
Oral cavity exam	Slightly erythematous posterior pharyngeal wall. Enlarged 2+ tonsils with overlying exudate	All three diagnoses under consideration are likely. Mono is somewhat more likely than the others, due to the large size of his tonsils
Cervical lymph nodes exam	Bilaterally enlarged submandibular lymph nodes	All diagnoses under consideration are likely
Abdominal exam	No splenomegaly	This does not decrease the likelihood of mononucleosis, because splenomegaly is not always present in this case.

		So, the absence of this finding does not help with the diagnostic reasoning, but the presence of this finding helps with management of this condition.

Because at this point, the greatest index of suspicion is for Mononucleosis and Strep Pharyngitis, the clinician can do labs (mon-spot and rapid strep test) to confirm one of these diagnoses. Mono spot, which is a serological lab test, comes back positive and establishes the diagnosis.