



NR603 Week 6 Assignment: Clinical Education Associated (CEA) Pre-Diagnostic Exam Case Study Part 2

Name: [REDACTED]

General Instructions

This assignment builds on the case study in this week's collaboration café. Carefully read the assignment guidelines and rubric and complete each case study section below. Use of this template is required.

Differential Diagnoses

- Diagnosis 1: **Acute bacterial rhinosinusitis (ABRS)**
 - **Pathophysiology:** Acute rhinosinusitis is characterized by inflammation of the mucosal lining of the nasal passages and paranasal sinuses lasting up to four weeks, resulting in impaired mucociliary clearance, mucus retention, and subsequent bacterial overgrowth (Butler & Hernandez, 2025).
 - **Rationale:** The patient's presentation of persistent facial pain, purulent nasal drainage, and nasal congestion lasting longer than 10 days without improvement meets the diagnostic criteria for acute bacterial rhinosinusitis as outlined by the Infectious Disease Society of America and the American Academy of Otolaryngology (Butler & Hernandez, 2025).
- Diagnosis 2: **Acute viral rhinosinusitis (Viral URI)**
 - **Pathophysiology:** Viral rhinosinusitis is also characterized by irritation of the mucosal lining of the nasal passage and paranasal sinuses. However, symptoms peak in the first 3-4 days and typically resolve within 7-10 days (Romano et al., 2025). Symptoms lasting more than 10 days can also be viral rhinosinusitis due to slow recovery (Romano et al., 2025)
 - **Rationale:** In this case, the patient's initial presentation with mild congestion is consistent with viral illness. However, symptom progression beyond 10 days with changes in the color of nasal drainage and worsening congestion makes viral rhinosinusitis less likely (Butler & Hernandez, 2025).
- Diagnosis 3: **Allergic rhinitis**
 - **Pathophysiology:** Allergic rhinitis is a type 1 hypersensitivity reaction affecting the nasal mucosa and causing rhinorrhea, nasal congestion, nasal itching, and sneezing (Siddiqui et al., 2022). It can lead to secondary infection, such as sinusitis (Siddiqui et al., 2022).



- **Rationale:** In this case, the patient presents with nasal mucosal edema, nasal drainage, which was clear initially, and postnasal drip. However, the presence of facial pain, purulent nasal drainage, and a prolonged course of symptoms that are progressive in nature is not typical of allergic rhinitis.

Differential Diagnoses Comparative and Contrastive Analysis

- **Comparison and contrast of occurrence:**

Acute viral rhinosinusitis is far more common in occurrence than acute bacterial rhinosinusitis (ABRS). Most cases of ABRS actually begin as a viral infection, with only a small percentage progressing to bacterial disease when symptoms either persist beyond the expected course or worsen after initial improvement (Butler & Hernandez, 2025). In contrast, acute viral rhinosinusitis is typically caused by common respiratory viruses such as rhinovirus, influenza, and respiratory syncytial virus, and it generally resolves on its own within 7-10 days without the need for antibiotics (Romano et al., 2025). Allergic Rhinitis, also a very prevalent condition, frequently coexists with other disorders like asthma, conjunctivitis, and sinusitis (Siddiqui et al., 2022).

- **Comparison and contrast of pathophysiology:**

In acute bacterial rhinosinusitis, the disease process usually starts with either a viral illness or allergic irritation. It makes the normal drainage pathways of the sinuses become narrowed or blocked, and the secretion gets collected inside the sinuses. Bacteria can grow in this environment and cause an inflammatory reaction, which causes thick, purulent mucus, facial pressure, and persistent symptoms (Romano et al., 2025). Similarly, respiratory viruses cause inflammation of the sinus opening in acute viral rhinosinusitis, leading to nasal congestion and clear mucus drainage (Romano et al., 2025). The symptoms are worse in the first few days, followed by myalgia, chills, and lastly develop cough (Romano et al., 2025). Compared to acute bacterial rhinosinusitis, acute viral rhinosinusitis is self-limiting. For allergic rhinitis, the mechanism is slightly different because it is driven by an immune hypersensitivity response rather than an infection. Normally, allergen exposure, such as pollen, dust mites, or cat dander, triggers the release of histamine and other immune mediators that produce nasal passage swelling, itching, sneezing, and watery nasal drainage (Siddiqui et al., 2022). These symptoms continue or persist as long as allergen exposure continues.

- **Comparison and contrast of presentation:**

Acute bacterial rhinosinusitis often presents symptoms lasting more than 10 days or getting worse after initially getting better (Romano et al., 2025). People commonly describe localized facial heaviness and pain, along with thick and discolored nasal secretions. People may or may not get a fever in acute bacterial rhinosinusitis (Butler & Hernandez, 2025). Acute viral