**Table S1. Details of 45 Clinical Vignettes**

|  |  |  |  |
| --- | --- | --- | --- |
| **Case number** | **Vignette** | **Diagnosis** | **Triage level** |
| 1 | A 48-year-old woman with a history of migraine headaches presents to the emergency room with altered mental status over the last several hours. She was found by her husband, earlier in the day, to be acutely disoriented and increasingly somnolent. On physical examination, she has scleral icterus, mild right upper quadrant tenderness, and asterisks. Preliminary laboratory studies are notable for a serum ALT of 6498 units/L, total bilirubin of 5.6 mg/dL, and INR of 6.8. Her husband reports that she has consistently been taking pain medications and started taking additional 500 mg acetaminophen pills several days ago for lower back pain. Further history reveals a medication list with multiple acetaminophen-containing preparations | Acute liver failure | Emergent |
| 2 | A 12-year-old girl presents with sudden-onset severe generalized abdominal pain associated with nausea, vomiting, and diarrhea. On exam she appears ill and has a temperature of 104°F (40°C). Her abdomen is tense with generalized tenderness and guarding. No bowel sounds are present. | Appendicitis | Emergent |
| 3 | A 27-year-old woman with a history of moderate persistent asthma presents to the emergency room with progressive worsening of shortness of breath, wheezing, and cough over 3 days. She reports prior exposure to a person who had a runny nose and a hacking cough. She did not receive significant relief from her rescue inhaler with worsening symptoms, despite increased use. She has been compliant with her maintenance asthma regimen, which consists of an inhaled corticosteroid and a leukotriene receptor antagonist for maintenance therapy and albuterol as rescue therapy. Her cough is disrupting her sleep pattern and as a consequence she is experiencing daytime somnolence, which is affecting her job performance. | Asthma | Emergent |
| 4 | A 67-year-old woman with a history of COPD presents with 3 days of worsening dyspnea and increased frequency of coughing. Her cough is now productive of green, purulent sputum. The patient has a 100-pack-year history of smoking. She has had intermittent, low-grade fever of 100°F (37.7°C) for the past 3 days and her appetite is poor. She has required increased use of rescue bronchodilator therapy in addition to her maintenance medications to control symptoms. | COPD flare (more sever) | Emergent |
| 5 | A 65-year-old woman presents with unilateral leg pain and swelling of 5 days' duration. There is a history of hypertension, mild CHF, and recent hospitalization for pneumonia. She had been recuperating at home but on beginning to mobilize and walk, the right leg became painful, tender, and swollen. On examination, the right calf is 4cm greater in circumference than the left when measured 10 cm below the tibial tuberosity. Superficial veins in the leg are more dilated on the right foot and the right leg is slightly redder than the left. There is some tenderness on palpation in the popliteal fossa behind the knee. | Deep vein thrombosis | Emergent |
| 6 | Mr. Y is a 64 year old Chinese male who presents with chest pain for 24 hours. One day prior to presentation, the patient began to experience 8/10, non-radiating substernal chest pressure associated with diaphoresis and shortness of breath. The pain initially improved with Tylenol, however over the following 24 hours, his symptoms worsened. The patient went to his primary physician, where an EKG was performed which showed ST elevation in leads V2-V6. | Heart Attack | Emergent |
| 7 | A 4-year-old boy presents with a 7-day history of abdominal pain and watery diarrhea that became bloody after the first day. Three days before the onset of symptoms, he had visited the county fair with his family and had eaten a hamburger. Physical examination reveals a mild anemia | Hemolytic uremic syndrome | Emergent |
| 8 | A 45-year-old white man presents to the emergency department with a 1-hour history of sudden onset of left-sided flank pain radiating down toward his groin. The patient is writhing in pain, which is unrelieved by position. He also complains of nausea and vomiting. | Kidney stones | Emergent |
| 9 | A 28-year-old man presents to his physician with a 5-day history of fever, chills, and rigors, not improving with acetaminophen (paracetamol), along with diarrhea. He had been traveling in Central America for 3 months, returning 8 weeks ago. He had been bitten by mosquitoes on multiple occasions, and although he initially took malaria prophylaxis, he discontinued it due to mild nausea. He does not know the specifics of his prophylactic therapy. On examination he has a temperature of 100.4°F (38°C), and is mildly tachycardic with a BP of 126/82 mmHg. The remainder of the examination is normal. | Malaria | Emergent |
| 10 | An 18-year-old male student presents with severe headache and fever that he has had for 3 days. Examination reveals fever, photophobia, and neck stiffness. | Meningitis | Emergent |
| 11 | A 65-year-old man with hypertension and degenerative joint disease presents to the emergency department with a three-day history of a productive cough and fever. He has a temperature of 38.3°C (101°F), a blood pressure of 144/92 mm Hg, a respiratory rate of 22 breaths per minute, a heart rate of 90 beats per minute, and oxygen saturation of 92 percent while breathing room air. Physical examination reveals only crackles and egophony in the right lower lung field. The white-cell count is 14,000 per cubic millimeter, and the results of routine chemical tests are normal. A chest radiograph shows an infiltrate in the right lower lobe. | Pneumonia | Emergent |
| 12 | A 65-year-old man presents to the emergency department with acute onset of SOB of 30 minutes' duration. Initially, he felt faint but did not lose consciousness. He is complaining of left-sided chest pain that worsens on deep inspiration. He has no history of cardiopulmonary disease. A week ago he underwent a total left hip replacement and, following discharge, was on bed rest for 3 days due to poorly controlled pain. He subsequently noticed swelling in his left calf, which is tender on examination. His current vital signs reveal a fever of 100.4°F (38.0°C), heart rate 112 bpm, BP 95/65, and an O2 saturation on room air of 91%. | Pulmonary embolism | Emergent |
| 13 | An 8-year-old boy in Oklahoma is brought to the emergency department over the fourth of July weekend because of fever, chills, malaise, athralgias, and a headache. Physical examination reveals a maculopapular rash that is most prominent on his wrists and ankles. | Rocky Mountain Spotted Fever | Emergent |
| 14 | A 70-year-old man with a history of chronic HTN and atrial fibrillation is witnessed by a family member to have nausea, vomiting, and right-sided weakness, as well as difficulty speaking and comprehending language. The symptoms started with only mild slurred speech before progressing over several minutes to severe aphasia and right arm paralysis. The patient is taking warfarin. | Stroke | Emergent |
| 15 | A 63-year-old man sustained a cut on his hand while gardening. His immunization history is significant for not having received a complete tetanus immunization schedule. He presents with signs of generalized tetanus with trismus ("lock jaw"), which results in a grimace described as "risus sardonicus" (sardonic smile). Intermittent tonic contraction of his skeletal muscles causes intensely painful spasms, which last for minutes, during which he retains consciousness. The spasms are triggered by external (noise, light, drafts, physical contact) or internal stimuli, and as a result he is at the risk of sustaining fractures or developing rhabdomyolysis. The tetanic spasms also produce opisthotonus, board-like abdominal wall rigidity, dysphagia, and apneic periods due to contraction of the thoracic muscles and/or glottal or pharyngeal muscles. During a generalized spasm the patient arches his back, extends his legs, flexes his arms in abduction, and clenches his fists. Apnea results during some of the spasms. Autonomic overactivity initially manifests as irritability, restlessness, sweating, and tachycardia. Several days later this may present as hyperpyrexia, cardiac arrhythmias, labile hypertension, or hypotension. | Tetanus | Emergent |
| 16 | An 18-month-old toddler presents with 1 week of rhinorrhea, cough, and congestion. Her parents report she is irritable, sleeping restlessly, and not eating well. Overnight she developed a fever. She attends day care and both parents smoke. On examination signs are found consistent with a viral respiratory infection including rhinorrhea and congestion. The toddler appears irritable and apprehensive and has a fever. Otoscopy reveals a bulging, erythematous tympanic membrane and absent landmarks. | Acute otitis media | Non-Emergent |
| 17 | A 7-year-old girl presents with abrupt onset of fever, nausea, vomiting, and sore throat. The child denies cough, rhinorrhea, or nasal congestion. On physical exam, oral temperature is 101°F (38.5°C) and there is an exudative pharyngitis, with enlarged cervical lymph nodes. A rapid antigen test is positive for group A Streptococcus (GAS). | Acute pharyngitis | Non-Emergent |
| 18 | Mr. A is a 24 year-old man who presents to your office for complaints of sore throat, fever, and headache. His symptoms started 2 days ago with acute onset of sore throat and fever to 102.2. He has had no cough. His physical examination is normal, except for the presence of tonsillar exudates and some tender anterior cervical lymphadenopathy. He is otherwise in good health, and is on no medications except for ibuprofen for fever. He has no drug allergies. (, Centor score = 4 – treat, or test and treat) | Acute pharyngitis | Non-Emergent |
| 19 | Mrs. S is a 35 year-old woman who presents with 15 days of nasal congestion. She has had facial pain and green nasal discharge for the last 12 days. She has had no fever. On physical examination, she has no fever and the only abnormal finding is maxillary tenderness on palpation. She is otherwise healthy, except for mild obesity. She is on no medications, except for an over-the-counter decongestant. She has no drug allergies | Acute sinusitis | Non-Emergent |
| 20 | Consider a 35-year-old man who developed low back pain after shoveling snow 3 weeks ago. He presents to the office for an evaluation. On examination there is a new left foot drop. In study 82% physicians recommend MRI (sciatica/sprain) | Back pain | Non-Emergent |
| 21 | A 45-year-old man presents with acute onset of pain and redness of the skin of his lower extremity. Low-grade fever is present and the pretibial area is erythematous, edematous, and tender. | Cellulitis | Non-Emergent |
| 22 | A 56-year-old woman with a history of smoking presents to her primary care physician with shortness of breath and cough for several days. Her symptoms began 3 days ago with rhinorrhea. She reports a chronic morning cough productive of white sputum, which has increased over the past 2 days. She has had similar episodes each winter for the past 4 years. She has smoked 1 to 2 packs of cigarettes per day for 40 years and continues to smoke. She denies hemoptysis, chills, or weight loss and has not received any relief from over-the-counter cough preparations. | COPD flare (milder) | Non-Emergent |
| 23 | A 30-year-old woman presents in January with 2-day history of fever, cough, headache, and generalized weakness. She was in her usual state of health before an abrupt onset of these symptoms. A few viral illnesses have affected her during the current winter, but not to this severity. She reports sick contacts at work and did not receive the seasonal influenza vaccine this season. | Influenza | Non-Emergent |
| 24 | A 16-year-old female high school student presents with complaints of fever, sore throat, and fatigue. She started feeling sick 1 week ago. Her symptoms are gradually getting worse, and she has difficulty swallowing. She has had a fever every day, and she could hardly get out of bed this morning. She does not remember being exposed to anybody with a similar illness recently. On physical examination she is febrile and looks sick. Enlarged cervical lymph nodes, exudative pharyngitis with soft palate petechiae and faint erythematous macular rash on the trunk and arms are found. | Mononucleosis | Non-Emergent |
| 25 | A 40-year-old man presents to his primary care physician with a 2-month history of intermittent upper abdominal pain. He describes the pain as a dull, gnawing ache. The pain sometimes wakes him at night, is relieved by food and drinking milk, and is helped partially by ranitidine. He had a similar but milder episode about 5 years ago, which was treated with omeprazole. Physical examination reveals a fit, apparently healthy man in no distress. The only abnormal finding is mild epigastric tenderness on palpation of the abdomen. | Peptic Ulcer Disease | Non-Emergent |
| 26 | A 6-year-old boy with a medical history significant for mild persistent asthma is brought to the clinic by his mother with a history of a 5-day cough. His mother reports that the child's fever continues to be elevated despite acetaminophen therapy. He has missed school for the past 3 days and he has a classmate sick with pneumonia. The mother reports that the appetite is good for the child. His cough produced yellowish sputum at home. His vitals at the clinic are: respiratory rate 19 breaths/min, heart rate 80 beats/min, and temperature 101.6°F (38.7°C). He appears in no respiratory distress. His lung examination reveals bilateral rales and occasional wheeze. CXR reveals lobar infiltrates without pleural effusions. | Pneumonia | Non-Emergent |
| 27 | A 14-year-old boy presents with nausea, vomiting, and diarrhea. Eighteen hours earlier, he had been at a picnic where he ingested undercooked chicken along with a variety of other foods. He reports moderate-volume, nonbloody stools occurring 6 times a day. He has mild abdominal cramps and a low-grade fever. He is evaluated at an acute care clinic and found to be mildly tachycardic (heart rate 105 bpm) with a normal BP and a low-grade temperature of 100.1°F (37.8°C). His physical exam is unremarkable except for mild diffuse abdominal tenderness and mild increased bowel sounds. He is able to take oral fluids and is instructed on the Appropriate oral fluid and electrolyte rehydration. | Salmonella | Non-Emergent |
| 28 | A 77-year-old man reports a 5-day history of burning and aching pain on the right side of his chest. This is followed by the development of erythema and a maculopapular rash in this painful area, accompanied by headache and malaise. The rash progressed to develop clusters of clear vesicles for 3 to 5 days, evolving through stages of pustulation, ulceration, and crusting. | Shingles | Non-Emergent |
| 29 | A 26-year-old female newly wed presents complaining of painful urination, feeling of urgent need to urinate, and more frequent urination for 2 days. She denies any fever, chills, nausea, vomiting, back pain, vaginal discharge, or vaginal pruritus. | Urinary tract infection | Non-Emergent |
| 30 | A 65-year-old woman presents with a chief complaint of dizziness. She describes it as a sudden and severe spinning sensation precipitated by rolling over in bed onto her right side. Symptoms typically last <30 seconds. They have occurred nightly over the last month and occasionally during the day when she tilts her head back to look upward. She describes no precipitating event prior to onset and no associated hearing loss, tinnitus, or other neurologic symptoms. Otologic and neurologic examinations are normal except for the Dix-Hallpike maneuver, which is negative on the left but strongly positive on the right side. | Vertigo | Non-Emergent |
| 31 | A 34-year-old woman with no known underlying lung disease 12-day history of cough. She initially had nasal congestion and a mild sore throat, but now her symptoms are all related to a productive cough without paroxysms. She denies any sick contacts. On physical examination she is not in respiratory distress and is afebrile with normal vital signs. No signs of URI are noted. Scattered wheezes are present diffusely on lung auscultation. | Acute bronchitis | Self-Care |
| 32 | Mrs. L is a 61-year-old woman who presents with 4 days of a cough productive of yellow sputum. Her symptoms started 4 days ago with rhinorrhea and productive cough. She initially had fevers as high as 101 for 2 days, but those have now resolved. In the office, she has normal vital signs and a normal physical examination. She is otherwise healthy except for high cholesterol for which she is being treated with atorvastatin. She has no drug allergies. | Acute bronchitis | Self-Care |
| 33 | A 14-year-old boy with no significant past medical history presents 3 days after developing a red, irritated right eye that spread to the left eye today. He has watery discharge from both eyes and they are stuck shut in the morning. He reports recent upper respiratory symptoms and that several children at his day camp recently had pink eye. He denies significant pain or light sensitivity and does not wear contact lenses. On examination, his pupils are equal and reactive and he has a right-sided, tender preauricular lymph node. Penlight examination does not reveal any corneal opacity. | Acute conjunctivitis | Self-Care |
| 34 | Mr. E is a 26-year-old man who presents to your office for complaints of sore throat, headache, and non-productive cough. His symptoms started 2 days ago with acute onset of sore throat. He has been afebrile. His physical examination is normal, except for some pharyngeal erythema. He is otherwise in good health, and is on no medications except for acetaminophen for his sore throat and fever. He has no drug allergies. | Acute pharyngitis | Self-Care |
| 35 | A 22-year-old student presents with a 5-year history of worsening nasal congestion, sneezing, and nasal itching. Symptoms are year-round but worse during the spring season. On further questioning it is revealed that he has significant eye itching, redness, and tearing as well as palate and throat itching during the spring season. He remembers that his mother told him at some point that he used to have eczema in infancy. | Allergic rhinitis | Self-Care |
| 36 | A 38-year-old man with no significant history of back pain developed acute LBP when lifting boxes 2 weeks ago. The pain is aching in nature, located in the left lumbar area, and associated with spasms. He describes previous similar episodes several years ago, which resolved without seeing a doctor. He denies any leg pain or weakness. He also denies fevers, chills, weight loss, and recent infections. Over-the-counter ibuprofen has helped somewhat, but he has taken it only twice a day for the past 3 days because he does not want to become dependent on painkillers. On examination, there is decreased lumbar flexion and extension secondary to pain, but a neurologic exam is unremarkable. | Back pain | Self-Care |
| 37 | A 9-year-old boy is brought to the ER after being stung by a bee at a picnic. He is crying hysterically. After 15 minutes of calming him down, exam reveals a swollen tender upper lip but no tongue swelling, no drooling, no stridor, no rash, and no other complaints. | Bee sting without anaphylaxis | Self-Care |
| 38 | A 17-year-old male student presents with recurrent mouth ulceration since his early schooldays. He has no respiratory, anogenital, gastrointestinal, eye, or skin lesions. His mother had a similar history as a teenager. The social history includes no tobacco use and virtually no alcohol consumption. He has no history of recent drug or medication ingestion. Extraoral exam reveals no significant abnormalities and specifically no pyrexia; no cervical lymph node enlargement; nor cranial nerve, salivary, or temporomandibular joint abnormalities. Oral exam reveals a well-restored dentition and there is no clinical evidence of periodontal-attachment loss or pocketing. He has five 4 mm round ulcers with inflammatory haloes in his buccal mucosae. | Canker sore | Self-Care |
| 39 | Consider a 40-year-old, monogamous, married woman who calls to report a 2-day history of vaginal itching and thick white discharge. She has no abdominal pain or fever. (in study 50% recommended physician visit) | Candidal yeast infection | Self-Care |
| 40 | A 5-month-old baby boy presents with difficulty and delay in passing hard stools. His mother reports that he strains for several hours and may even miss a day, before passing stool with screaming and occasional spots of fresh blood on the stool or diaper. He has recently been weaned from breastfeeding to cows' milk formula, which he had been reluctant to drink initially. The child is thriving and now feeding normally. There was no neonatal delay in defecation and no history of excessive vomiting or abdominal distension. | Constipation | Self-Care |
| 41 | A 12-year-old female presents with dry, itchy skin that involves the flexures in front of her elbows, behind her knees, and in front of her ankles. Her cheeks also have patches of dry, scaly skin. She has symptoms of hay fever and has recently been diagnosed with egg and milk allergy. She has a brother with asthma and an uncle and several cousins who have been diagnosed with eczema. | Eczema | Self-Care |
| 42 | A 30-year-old man presents with a painful, swollen right eye for the past day. He reports minor pain on palpation of the eyelid and denies any history of trauma, crusting, or change in vision. He has no history of allergies or any eye conditions and denies the use of any new soaps, lotions, or creams. On exam, he has localized tenderness to palpation and erythema on the midline of the lower eyelid near the lid margin. The remainder of the physical exam, including the globe, is normal. | Stye | Self-Care |
| 43 | illness Mr. R. is a 56-year-old man who presents to you with 6 days of non-productive cough, nasal congestion, and green 5 nasal discharge. He has had intermittent fevers as high as 100.8. His physical examination is normal except for rhinorrhea. He is otherwise healthy, except for chronic osteoarthritis of the right knee. He has no drug allergies. | Viral upper respiratory | Self-Care |
| 44 | A 30-year-old man presents with a 2-day history of runny nose and sore throat. He feels hot and sweaty, has a mild headache, is coughing up clear sputum and complains of muscle aches. He would like antibiotics as he was prescribed them last year when he had a similar condition. On examination, he is afebrile, has a normal pulse, a slightly inflamed pharynx and nontender cervical lymphadenopathy. There is no neck stiffness and his chest is clear. He has tried over-the-counter cough medications, but has not found these helpful. He smokes 10 cigarettes per day. | Viral upper respiratory | Self-Care |
| 45 | Elizabeth’s 2-year-old son has a fever and vomited twice. Elizabeth worries about dehydration, so she gives Jack a sippy cup of apple juice. He immediately vomits up the juice. Elizabeth debates what to do next. Should she try to reach Jack’s pediatrician or should she take Jack to the ED? Instead, she calls her triage nurse line. Temperature = 100.5 | Vomiting | Self-Care |

All cases are cited from: Semigran HL et al. BMJ. 2015;351:h3480

**Table S2. Details of diagnosis by GPT-4 and physicians**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4** |  | **Physician A** |  | **Physician B** |  | **Physician C** |  |  |
| **Case number** | **Correct diagnosis** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Consensus** |
| 1 | Acute liver failure | Acute liver failure due to acetaminophen overdose | Correct | Acetaminophen poisoning | Correct | Acute liver failure | Correct | Acetaminophen Poisoning | Correct | Correct |
| 2 | Appendicitis | Acute appendicitis | Correct | peritonitis | Incorrect | Acute abdomen | Incorrect | Acute appendicitis | Correct | Incorrect |
| 3 | Asthma | Acute exacerbation of asthma | Correct | Bronchial asthma attack | Correct | Asthma attack | Correct | Asthma attack | Correct | Correct |
| 4 | COPD flare (more sever) | Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) | Correct | COPD acute exacerbation | Correct | COPD acute exacerbation | Correct | Pneumonia | Correct | Correct |
| 5 | Deep vein thrombosis | Deep Vein Thrombosis (DVT) | Correct | DVT | Correct | DVT | Correct | DVT | Correct | Correct |
| 6 | Heart Attack | Acute myocardial infarction (AMI), specifically ST-elevation myocardial infarction (STEMI) | Correct | AMI | Correct | AMI | Correct | AMI | Correct | Correct |
| 7 | Hemolytic uremic syndrome | Hemolytic Uremic Syndrome (HUS) | Correct | Colitis | Incorrect | Acute gastroenteritis (E. coli, possible EHEC) | Incorrect | Hemolytic Uremia Syndrome | Correct | Incorrect |
| 8 | Kidney stones | Kidney stones (renal colic) | Correct | Inguinal hernia and bowel obstruction | Incorrect | UTI (urinary tract stones) | Correct | Ureteral calculus | Correct | Correct |
| 9 | Malaria | Malaria | Correct | Malaria | Correct | Traveler's diarrhea | Incorrect | Malaria | Correct | Correct |
| 10 | Meningitis | Bacterial meningitis | Correct | Meningitis | Correct | Meningitis | Correct | Aseptic (viral) meningitis | Correct | Correct |
| 11 | Pneumonia | Community-acquired pneumonia (CAP) | Correct | Bacterial pneumoniae | Correct | Pneumonia | Correct | Bacterial pneumonia | Correct | Correct |
| 12 | Pulmonary embolism | Pulmonary embolism (PE) | Correct | Pulmonary thromboembolism | Correct | Pulmonary embolism | Correct | Pulmonary embolus | Correct | Correct |
| 13 | Rocky Mountain Spotted Fever | Rocky Mountain Spotted Fever (RMSF) | Correct | Idiopathic thrombocytopenic purpura | Incorrect | Measles | Incorrect | Lyme disease | Correct | Incorrect |
| 14 | Stroke | Acute ischemic stroke | Correct | Cerebral embolism | Correct | Cerebral infarction | Correct | Cerebral infarction | Correct | Correct |
| 15 | Tetanus | Tetanus | Correct | Tetanus | Correct | Tetanus | Correct | Tetanus | Correct | Correct |
| 16 | Acute otitis media | Acute otitis media (AOM) | Correct | AOM | Correct | AOM | Correct | AOM | Correct | Correct |
| 17 | Acute pharyngitis | Streptococcal pharyngitis (Strep throat) | Correct | Streptococcus pharyngitis | Correct | Streptococcal pharyngitis | Correct | Streptococcal pharyngitis | Correct | Correct |
| 18 | Acute pharyngitis | Streptococcal pharyngitis (strep throat) | Correct | Streptococcus tonsillitis | Correct | Streptococcal pharyngitis | Correct | Streptococcal pharyngitis | Correct | Correct |
| 19 | Acute sinusitis | Acute bacterial sinusitis | Correct | Sinusitis | Correct | Sinusitis | Correct | Acute sinusitis | Correct | Correct |
| 20 | Back pain | Lumbar disc herniation with nerve root compression, resulting in sciatica and left foot drop | Correct | Herniated lumbar disk | Correct | Lumbar hernia | Correct | Lumbar disc herniation | Correct | Correct |
| 21 | Cellulitis | Cellulitis | Correct | Cellulitis | Correct | Cellulitis | Correct | Cellulitis | Correct | Correct |
| 22 | COPD flare (milder) | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Correct | COPD | Correct | COPD | Correct | Acute exacerbation of COPD | Correct | Correct |
| 23 | Influenza | Influenza | Correct | Influenza viral infection | Correct | Influenza | Correct | Influenza | Correct | Correct |
| 24 | Mononucleosis | Infectious mononucleosis (mono) | Correct | EB viral infection | Correct | Erythema infectiosum | Incorrect | Infectious mononucleosis | Correct | Correct |
| 25 | Peptic Ulcer Disease | Peptic ulcer disease (PUD) | Correct | Duodenal ulcer | Correct | Gastric ulcer | Correct | Gastric ulcer | Correct | Correct |
| 26 | Pneumonia | Community-acquired pneumonia (CAP) | Correct | Mycoplasma pneumonia | Correct | Mycoplasma pneumoniae | Correct | Mycoplasma pneumoniae | Correct | Correct |
| 27 | Salmonella | Foodborne gastroenteritis, likely due to Campylobacter or Salmonella infection. | Correct | Staphylococcus food poisoning | Incorrect | Campylobacter enteritis | Correct | Salmonella food poisoning | Correct | Correct |
| 28 | Shingles | Herpes Zoster (Shingles) | Correct | Shingles | Correct | Herpes zoster | Correct | Herpes zoster | Correct | Correct |
| 29 | Urinary tract infection | Acute cystitis (urinary tract infection, UTI) | Correct | Cystitis | Correct | Cystitis | Correct | Acute cystitis | Correct | Correct |
| 30 | Vertigo | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | BPPV | Correct | BPPV | Correct | BPPV | Correct | Correct |
| 31 | Acute bronchitis | Acute bronchitis | Correct | Bronchial asthma | Correct | Asthma | Correct | Cough and asthma | Correct | Correct |
| 32 | Acute bronchitis | Acute bronchitis | Correct | Sinusitis | Correct | URTI | Correct | URTI | Correct | Correct |
| 33 | Acute conjunctivitis | Viral conjunctivitis | Correct | Epidemic keratoconjunctivitis | Correct | Pool fever | Correct | Epidemic keratoconjunctivitis | Correct | Correct |
| 34 | Acute pharyngitis | Viral pharyngitis | Correct | Common cold | Correct | URTI | Correct | URTI | Correct | Correct |
| 35 | Allergic rhinitis | Allergic rhintis | Correct | Pollen allergy | Correct | Allergic rhinitis | Correct | Allergic rhinitis | Correct | Correct |
| 36 | Back pain | Acute mechanical low back pain (LBP) due to muscle strain or sprain | Correct | Acute lower back pain | Correct | Lumbar hernia | Correct | Acute lumbar pain | Correct | Correct |
| 37 | Bee sting without anaphylaxis | Localized allergic reaction to the bee sting | Correct | Bee sting | Correct | Hereditary angioedema | Incorrect | Bee sting | Correct | Correct |
| 38 | Canker sore | Recurrent Aphthous Stomatitis (RAS) | Correct | Behçet's disease | Incorrect | Behcet's disease | Incorrect | Aphthous stomatitis | Correct | Incorrect |
| 39 | Candidal yeast infection | Candidiasis (vaginal yeast infection) | Correct | Candida vaginitis | Correct | Candida vaginitis | Correct | Gonorrhea | Incorrect | Correct |
| 40 | Constipation | Functional constipation | Correct | Constipation | Correct | Intestinal calculus | Incorrect | Constipation | Correct | Correct |
| 41 | Eczema | Atopic dermatitis (eczema) | Correct | Atopic dermatitis | Correct | Atopic dermatitis | Incorrect | Atopic dermatitis | Correct | Correct |
| 42 | Stye | Hordeolum (stye) | Correct | Conjunctivitis | Correct | Blepharitis | Correct | Molluscum contagiosum | Correct | Correct |
| 43 | Viral upper respiratory | Most likely diagnosis: | Correct | Acute sinusitis | Correct | Sinusitis | Correct | Acute sinusitis | Correct | Correct |
| 44 | Viral upper respiratory | Viral upper respiratory tract infection (common cold) | Correct | Common cold | Correct | URTI | Correct | Influenza | Correct | Correct |
| 45 | Vomiting | Acute gastroenteritis | Incorrect | Acute Gastroenteritis | Correct | Acute gastroenteritis | Correct | Norovirus enteritis | Correct | Correct |

**Table S3. Details of differential diagnosis by GPT-4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case number** | **Diagnosis** | **The most likely primary diagnosis and potential diagnosis** | **Differential diagnoses** | **Reason of listed diagnoses** | **Decision** |
| 1 | Acute liver failure | Acute liver failure due to acetaminophen overdose | Viral hepatitis Autoimmune hepatitis Ischemic hepatitis (shock liver) | The reason for this diagnosis: The patient has a history of taking multiple acetaminophen-containing medications and has recently increased her acetaminophen intake. Her lab results show elevated liver enzymes (ALT), high bilirubin, and a significantly increased INR, which are all indicative of liver dysfunction. Additionally, she presents with altered mental status, scleral icterus, and asterixis, which are common symptoms of acute liver failure. | Appropriate |
| 2 | Appendicitis | Acute appendicitis | Gastroenteritis Mesenteric adenitis Intestinal obstruction | The patient's age, sudden onset of severe generalized abdominal pain, nausea, vomiting, diarrhea, fever, and physical exam findings of a tense abdomen with generalized tenderness and guarding are consistent with acute appendicitis. | Inappropriate |
| 3 | Asthma | Acute exacerbation of asthma | Viral upper respiratory tract infection (URI) Pneumonia Bronchitis | The patient has a history of moderate persistent asthma and is experiencing a progressive worsening of shortness of breath, wheezing, and cough, which is not relieved by her rescue inhaler. Additionally, she has been exposed to a person with respiratory symptoms, which could have triggered her asthma exacerbation. | Appropriate |
| 4 | COPD flare (more sever) | Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) | Community-acquired pneumonia (CAP) Bronchitis Congestive heart failure (CHF) | The patient has a history of COPD and a significant smoking history, which are risk factors for AECOPD. She presents with worsening dyspnea, increased frequency of coughing, production of green purulent sputum, low-grade fever, and poor appetite, all of which are typical symptoms of an exacerbation. Additionally, she has required increased use of rescue bronchodilator therapy to control her symptoms. | Appropriate |
| 5 | Deep vein thrombosis | Deep Vein Thrombosis (DVT) | Cellulitis Baker's cyst Muscle strain or injury | The patient presents with unilateral leg pain, swelling, and a larger calf circumference on the affected side, along with dilated superficial veins and slight redness. These are classic signs of DVT. Moreover, the patient's history of hypertension, mild CHF, and recent hospitalization for pneumonia are risk factors that increase the likelihood of DVT. | Appropriate |
| 6 | Heart Attack | Acute myocardial infarction (AMI), specifically ST-elevation myocardial infarction (STEMI) | Unstable angina Acute pericarditis Aortic dissection | The patient is presenting with classic symptoms of myocardial infarction, including substernal chest pressure, diaphoresis, and shortness of breath. The EKG findings of ST elevation in leads V2-V6 further support the diagnosis of a STEMI. | Appropriate |
| 7 | Hemolytic uremic syndrome¹ | Hemolytic Uremic Syndrome (HUS) | Shigellosis Campylobacteriosis Inflammatory Bowel Disease (IBD) | The child's symptoms include abdominal pain, watery diarrhea that turned bloody, and mild anemia. These symptoms, combined with the recent history of consuming a hamburger at a county fair, suggest a possible infection with E. coli O157:H7, which can lead to HUS. HUS is characterized by hemolytic anemia, thrombocytopenia, and acute kidney injury. | Appropriate |
| 8 | Kidney stones | Kidney stones (renal colic) | Acute pyelonephritis Aortic dissection Acute diverticulitis | The patient's sudden onset of severe, unilateral flank pain radiating to the groin, accompanied by nausea and vomiting, are classic symptoms of kidney stones. | Appropriate |
| 9 | Malaria | Malaria | Dengue fever Typhoid fever Traveler's diarrhea | The patient has a recent travel history to Central America, where malaria is endemic. He also reports having been bitten by mosquitoes and discontinuing malaria prophylaxis due to mild nausea. The presentation of fever, chills, and rigors is consistent with malaria. | Appropriate |
| 10 | Meningitis | Bacterial meningitis | Viral meningitis Encephalitis Subarachnoid | The patient presents with severe headache, fever, photophobia, and neck stiffness, which are classic symptoms of bacterial meningitis. | Appropriate |
| 11 | Pneumonia | Community-acquired pneumonia (CAP) | Acute bronchitis Congestive heart failure (CHF) Pulmonary embolism (PE) | The patient presents with a productive cough, fever, and crackles and egophony in the right lower lung field, along with a chest radiograph showing an infiltrate in the right lower lobe. These findings are consistent with pneumonia. The patient's age and presentation in the emergency department also suggest community-acquired pneumonia rather than hospital-acquired or healthcare-associated pneumonia. | Appropriate |
| 12 | Pulmonary embolism | Pulmonary embolism (PE) | Pneumonia Acute coronary syndrome (ACS) Pleurisy | The patient has several risk factors and symptoms consistent with a pulmonary embolism. He recently underwent a total left hip replacement, followed by a period of bed rest, which increases the risk of developing a blood clot. He presents with acute onset shortness of breath, left-sided chest pain that worsens on deep inspiration, a fever, tachycardia, hypotension, and low oxygen saturation. Additionally, he has swelling and tenderness in his left calf, which could indicate deep vein thrombosis (DVT), a common source of pulmonary emboli. | Appropriate |
| 13 | Rocky Mountain Spotted Feve | Rocky Mountain Spotted Fever (RMSF) | Lyme disease Ehrlichiosis Viral exanthem | The patient presents with fever, chills, malaise, arthralgias, and headache, which are common symptoms of RMSF. Additionally, the maculopapular rash that is most prominent on the wrists and ankles is a classic sign of RMSF. The presentation during the fourth of July weekend in Oklahoma, an endemic area, further supports this diagnosis. | Appropriate |
| 14 | Stroke | Acute ischemic stroke | Hemorrhagic stroke Transient ischemic attack (TIA) Complex migraine | The patient's symptoms include right-sided weakness, difficulty speaking, and comprehending language, which are consistent with an acute ischemic stroke. The patient's age and medical history of hypertension and atrial fibrillation also put him at a higher risk for stroke. The sudden onset and progression of symptoms further support this diagnosis. | Appropriate |
| 15 | Tetanus | Tetanus | Dystonic reaction Strychnine poisoning Meningitis | The patient has a recent history of sustaining a cut while gardening, and an incomplete tetanus immunization schedule. He presents with classic symptoms of generalized tetanus, such as trismus, risus sardonicus, painful muscle spasms, and autonomic overactivity. | Appropriate |
| 16 | Acute otitis media | Acute Otitis Media (AOM) | Viral upper respiratory infection (common cold) Sinusitis Allergic rhintis | The patient presents with symptoms consistent with a viral respiratory infection (rhinorrhea, cough, and congestion) and has a bulging, erythematous tympanic membrane on otoscopy, which is characteristic of AOM. Additionally, the child's irritability, poor sleep, and decreased appetite can be attributed to the discomfort caused by AOM. The child's attendance at day care and exposure to parental smoking are risk factors for developing AOM. | Appropriate |
| 17 | Acute pharyngitis | Streptococcal pharyngitis (Strep throat) | Viral pharyngitis  Infectious mononucleosis Tonsillitis | The patient presents with fever, nausea, vomiting, sore throat, exudative pharyngitis, and enlarged cervical lymph nodes. Additionally, a rapid antigen test is positive for group A Streptococcus (GAS), which is the causative agent of strep throat. | Appropriate |
| 18 | Acute pharyngitis | Streptococcal pharyngitis (strep throat) | Viral pharingitis  Infetious  Tonsillitis | The patient presents with fever, nausea, vomiting, sore throat, exudative pharyngitis, and enlarged cervical lymph nodes. Additionally, a rapid antigen test is positive for group A Streptococcus (GAS), which is the causative agent of strep throat. | Appropriate |
| 19 | Acute sinusitis | Acute bacterial sinusitis | Acute viral rhinosinusitis Allergic rhintis  Chronic sinusitis | The patient presents with nasal congestion for 15 days, facial pain, and green nasal discharge for the last 12 days. These symptoms, along with the absence of fever and maxillary tenderness on palpation, are consistent with acute bacterial sinusitis. | Appropriate |
| 20 | Back pain | Lumbar disc herniation with nerve root compression, resulting in sciatica and left foot drop | Lumbar sprain/strain Lumbar spinal stenosis  Cauda equina syndrome | The patient developed low back pain after a physical activity (shoveling snow), which could have caused stress on the spine. The new left foot drop indicates possible nerve root compression, which is commonly associated with lumbar disc herniation. | Appropriate |
| 21 | Cellulitis | Cellulitis | Deep vein thrombosis(DVT) Erysipelas Insect bite or sting | The patient presents with acute onset of pain, redness (erythema), swelling (edema), and tenderness in the pretibial area of the lower extremity, along with low-grade fever. These are classic signs of a bacterial skin infection, such as cellulitis. | Appropriate |
| 22 | COPD flare (milder) | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Acute bronchitis Pneumonia Congestive heart failure | The patient has a significant smoking history, reports a chronic morning cough productive of white sputum, and has experienced similar episodes in the past. These factors, along with the recent increase in shortness of breath and cough, suggest an exacerbation of COPD. | Appropriate |
| 23 | Influenza | Influenza | Common cold COVID-19 Bacterial pneumonia | The patient has a sudden onset of fever, cough, headache, and generalized weakness, which are classic symptoms of influenza. Additionally, she has not received the seasonal flu vaccine and has been exposed to sick contacts at work. This increases her risk of contracting the flu. | Appropriate |
| 24 | Mononucleosis | Infectious mononucleosis (mono) | Streptococcal pharyngitis(strep throat) Viral pharyngitis Tonsillitis | The patient presents with fever, sore throat, fatigue, difficulty swallowing, and enlarged cervical lymph nodes, which are classic symptoms of infectious mononucleosis. Additionally, the presence of soft palate petechiae and a faint erythematous macular rash on the trunk and arms further supports this diagnosis. | Appropriate |
| 25 | Peptic Ulcer Disease | Peptic ulcer disease (PUD) | Gastroesophageal reflux disease (GERD) Gastritis Functional dyspepsia | The patient's history of intermittent upper abdominal pain, relief with food and milk, and previous response to omeprazole suggest peptic ulcer disease. The fact that the pain is waking him up at night and partially relieved by ranitidine also supports the diagnosis. | Appropriate |
| 26 | Pneumonia | Community-acquired pneumonia (CAP) | Bronchitis Asthma exacerbation Viral upper respiratory infection (URI) | The child presents with a persistent cough, fever unresponsive to acetaminophen, yellowish sputum, and a known exposure to a classmate with pneumonia. The physical examination reveals bilateral rales and occasional wheeze, and the chest x-ray (CXR) shows lobar infiltrates without pleural effusions. These findings are consistent with community-acquired pneumonia. | Appropriate |
| 27 | Salmonella | Foodborne gastroenteritis, likely due to Campylobacter or Salmonella infection. | Norovirus gastroenteritis Staphylococcus aureus food poisoning Clostridium perfringens food poisoning | The symptoms (nausea, vomiting, diarrhea, mild abdominal cramps, and low-grade fever) and history of ingesting undercooked chicken at a picnic 18 hours prior to the presentation are strongly suggestive of a bacterial gastroenteritis. | Appropriate |
| 28 | Shingles | Herpes Zoster (Shingles) | Cellulitis Contact dermatitis Insect bites | The patient's age, the unilateral burning and aching pain, the development of erythema and maculopapular rash, and the progression to clear vesicles, pustulation, ulceration, and crusting are all characteristic of herpes zoster. | Appropriate |
| 29 | Urinary tract infection | Acute cystitis (urinary tract infection, UTI) | Interstitial cystitis (painful bladder syndrome) Urethritis Overactive bladder syndrome | The patient presents with classic symptoms of a UTI, such as painful urination, urgency, and increased frequency of urination. The absence of fever, chills, nausea, vomiting, back pain, vaginal discharge, or vaginal pruritus suggests a lower urinary tract infection like cystitis rather than a more severe or complicated infection. | Appropriate |
| 30 | Vertigo | Benign Paroxysmal Positional Vertigo (BPPV) | Meniere's disease  Vestibular neuritis  Central nervous system (CNS) disorder, such as a cerebellar or brainstem lesion | The patient's symptoms are consistent with BPPV, including sudden, severe spinning sensations triggered by positional changes (e.g., rolling over in bed or tilting the head back). Additionally, the duration of symptoms (<30 seconds) and the strongly positive Dix-Hallpike maneuver on the right side support this diagnosis. | Appropriate |
| 31 | Acute bronchitis | Acute bronchitis | Viral upper respiratory infection(URI) Pneumonia Asthma exacerbation | The patient presents with a 12-day history of productive cough without paroxysms, which started with nasal congestion and a mild sore throat. She has no known underlying lung disease and no sick contacts. Her physical examination shows no signs of upper respiratory infection and scattered wheezes on lung auscultation, which are consistent with acute bronchitis | Appropriate |
| 32 | Acute bronchitis | Acute bronchitis | Pneumonia Upper respiratory tract infection(common cold) Sinusitis | Mrs. L presents with a productive cough, yellow sputum, and a recent history of rhinorrhea and fever. These symptoms are consistent with an acute bronchitis, which is usually caused by a viral infection. | Appropriate |
| 33 | Acute conjunctivitis | Viral conjunctivitis(pink eye) | Bacterial conjunctivitis Allergic conjunctivitis Dry eye syndrome | The patient has a history of recent upper respiratory symptoms, red and irritated eyes with watery discharge, and known exposure to other children with pink eye at his day camp. The presence of a tender preauricular lymph node also supports the diagnosis of viral conjunctivitis. He denies significant pain or light sensitivity, and there is no corneal opacity on examination, further supporting this diagnosis. | Appropriate |
| 34 | Acute pharyngitis | Viral pharyngitis | Bacterial pharyngitis Allergic rhintis Mononucleosis | Reason for this diagnosis: Mr. E's symptoms of sore throat, headache, and non-productive cough along with pharyngeal erythema, and absence of fever are consistent with viral pharyngitis. This is a common condition, often caused by viruses such as rhinovirus, adenovirus, or influenza virus. | Appropriate |
| 35 | Allergic rhinitis | Allergic rhintis | Non-allergic rhintis Vasomotor rhintis Chronic sinusitis | The patient has a history of worsening nasal congestion, sneezing, and nasal itching that is worse during the spring season. Additionally, the patient experiences eye itching, redness, tearing, as well as palate and throat itching during the spring season. These symptoms, along with a history of eczema in infancy, suggest a hypersensitivity reaction to environmental allergens, consistent with allergic rhinitis. | Appropriate |
| 36 | Back pain | Acute mechanical low back pain(LBP) | Lumbar muscle strain Lumbar disc herniation (although less likely without leg pain or weakness) Facet joint syndrome | The patient's history of lifting boxes and experiencing acute LBP, along with the aching nature of the pain and the association with muscle spasms, suggests mechanical low back pain. The patient also has no neurological symptoms, which supports this diagnosis | Appropriate |
| 37 | Bee sting without anaphylaxis | Localized allergic reaction to bee sting | Insect bite(non-allergic) Angioedema Infection | The patient is presenting with a swollen, tender upper lip following a bee sting, which is consistent with a localized allergic reaction. The absence of more severe symptoms such as tongue swelling, drooling, stridor, or rash suggests that this is not a systemic reaction. | Appropriate |
| 38 | Canker sore | Recurrent aphthous stomatitis (RAS) | Behçet's disease Herpes simplex virus(HSV) Systemic lups erythematosus(SLE) | The patient has a history of recurrent mouth ulcers since his early schooldays, with no other significant symptoms, and his mother also had a similar history. The ulcers described are round with inflammatory haloes, which are characteristic of aphthous ulcers. | Appropriate |
| 39 | Candidal yeast infection | Candidiasis(vaginal yeast infection) | Bacterial vaginosis Trichomoniasis Contact dermatitis | The patient's symptoms, including vaginal itching and thick white discharge, are characteristic of a vaginal yeast infection. The absence of other symptoms like abdominal pain or fever suggests a less severe condition. | Appropriate |
| 40 | Constipation | Functional constipation | Cow's milk protein allergy Hirschprung's disease Anal fissure | The reason for this diagnosis: The baby is presenting with difficulty and delay in passing hard stools, straining, and occasional spots of fresh blood on the stool or diaper. The child is otherwise thriving and feeding normally, and there is no history of neonatal delay in defecation, excessive vomiting, or abdominal distension. The recent switch from breastfeeding to cows' milk formula could also be a contributing factor to the development of constipation. | Appropriate |
| 41 | Eczema | Atopic dermatitis (eczema) | Psoriasis Contact dermatitis Seborrheic dermatitis | The patient presents with dry, itchy skin involving flexural areas and cheeks, a personal history of allergies, and a family history of asthma and eczema. These factors are consistent with atopic dermatitis, which is a chronic inflammatory skin condition often associated with a genetic predisposition and a history of atopic conditions. | Appropriate |
| 42 | Stye | Hordeolum (stye) | Chalazion Blepharitis Preseptal cellulitis | The patient presents with a painful, swollen right eye and localized tenderness to palpation and erythema on the midline of the lower eyelid near the lid margin. These symptoms are consistent with a hordeolum, which is an acute infection or inflammation of the oil glands in the eyelid. | Appropriate |
| 43 | Viral upper respiratory | Acute sinusitis | Common cold Allergic rhintis Influenza | Mr. R. presents with a non-productive cough, nasal congestion, green nasal discharge, and intermittent fevers. These symptoms are consistent with acute sinusitis, which is an inflammation of the sinuses often caused by viral or bacterial infections. | Appropriate |
| 44 | Viral upper respiratory | Acute viral upper respiratory tract infection (URTI) | Influenza Acute bacterial pharyngitis Sinusitis | The patient presents with symptoms consistent with a viral URTI, including a runny nose, sore throat, mild headache, clear sputum, and muscle aches. The absence of fever and a clear chest on examination also support this diagnosis. | Appropriate |
| 45 | Vomiting | Gastroenteritis | Food poisoning Upper respiratory infection Urinary tract infection | The child presents with a fever and vomiting, which are common symptoms of gastroenteritis. Additionally, vomiting up the juice immediately could indicate an upset stomach, which is also consistent with gastroenteritis. | Appropriate |

**Table S4. Details of triage by GPT-4 and physicians**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4** |  | **Physician A** |  | **Physician B** |  | **Physician C** |  |
| **Case number** | **Correct diagnosis** | **Triage** | **Decision** | **Triage** | **Decision** | **Triage** | **Decision** | **Triage** | **Decision** |
| 1 | Acute liver failure | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 2 | Appendicitis | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 3 | Asthma | Emergent | Correct | Non-emergent | Incorrect | Non-emergent | Incorrect | Emergent | Correct |
| 4 | COPD flare (more sever) | Emergent | Correct | Emergent | Correct | Non-emergent | Incorrect | Emergent | Correct |
| 5 | Deep vein thrombosis | Emergent | Correct | Emergent | Correct | Non-emergent | Incorrect | Non-emergent | Incorrect |
| 6 | Heart Attack | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 7 | Hemolytic uremic syndrome | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 8 | Kidney stones | Emergent | Correct | Emergent | Correct | Emergent | Incorrect | Emergent | Correct |
| 9 | Malaria | Non-emergent | Incorrect | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 10 | Meningitis | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 11 | Pneumonia | Non-emergent | Incorrect | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 12 | Pulmonary embolism | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 13 | Rocky Mountain Spotted Fever | Emergent | Correct | Emergent | Correct | Self-care | Incorrect | Emergent | Correct |
| 14 | Stroke | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 15 | Tetanus | Emergent | Correct | Emergent | Correct | Emergent | Correct | Emergent | Correct |
| 16 | Acute otitis media | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 17 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect | Non-emergent | Correct |
| 18 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect | Non-emergent | Correct |
| 19 | Acute sinusitis | Non-emergent | Correct | Non-emergent | Correct | Self-care | Incorrect | Non-emergent | Correct |
| 20 | Back pain | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 21 | Cellulitis | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect |
| 22 | COPD flare (milder) | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 23 | Influenza | Non-emergent | Correct | Non-emergent | Correct | Self-care | Incorrect | Self-care | Incorrect |
| 24 | Mononucleosis | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect | Emergent | Incorrect |
| 25 | Peptic Ulcer Disease | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect | Non-emergent | Correct |
| 26 | Pneumonia | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Emergent | Incorrect |
| 27 | Salmonella | Non-emergent | Correct | Non-emergent | Correct | Self-care | Incorrect | Self-care | Incorrect |
| 28 | Shingles | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 29 | Urinary tract infection | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 30 | Vertigo | Non-emergent | Correct | Non-emergent | Correct | Self-care | Incorrect | Emergent | Incorrect |
| 31 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect |
| 32 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct | Self-care | Correct |
| 33 | Acute conjunctivitis | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct | Self-care | Correct |
| 34 | Acute pharyngitis | Non-emergent | Incorrect | Self-care | Correct | Self-care | Correct | Self-care | Correct |
| 35 | Allergic rhinitis | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct | Non-emergent | Incorrect |
| 36 | Back pain | Non-emergent | Incorrect | Self-care | Correct | Self-care | Correct | Non-emergent | Incorrect |
| 37 | Bee sting without anaphylaxis | Non-emergent | Incorrect | Non-emergent | Incorrect | Emergent | Incorrect | Self-care | Incorrect |
| 38 | Canker sore | Self-care | Correct | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect |
| 39 | Candidal yeast infection | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect |
| 40 | Constipation | Non-emergent | Incorrect | Non-emergent | Incorrect | Emergent | Incorrect | Self-care | Correct |
| 41 | Eczema | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct | Non-emergent | Incorrect |
| 42 | Stye | Non-emergent | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct |
| 43 | Viral upper respiratory | Non-emergent | Incorrect | Non-emergent | Incorrect | Self-care | Correct | Self-care | Correct |
| 44 | Viral upper respiratory | Self-care | Correct | Self-care | Correct | Self-care | Correct | Self-care | Correct |
| 45 | Vomiting | Non-emergent | Incorrect | Non-emergent | Incorrect | Emergent | Incorrect | Emergent | Incorrect |

**Table S5. Details of answers by GPT-4 with Information on patient’s race and ethnicity**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4 + Black** |  | **GPT-4 + White** |  | **GPT-4 + Hispanic** |  | **GPT-4 + Asian** |  |
| **Case number** | **Correct diagnosis** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** |
| 1 | Acute liver failure | Acute liver failure | Correct | Acute liver failure | Correct | Acute Liver Failure, likely secondary to Acetaminophen toxicity | Correct | Acute liver failure due to acetaminophen overdose | Correct |
| 2 | Appendicitis | Acute appendicitis | Correct | Acute appendicitis | Correct | Acute Abdominal Peritonitis | Incorrect | Acute appendicitis | Correct |
| 3 | Asthma | Acute exacerbation of asthma | Correct | Asthma exacerbation | Correct | Acute Asthma Exacerbation | Correct | Asthma exacerbation | Correct |
| 4 | COPD flare (more sever) | Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) | Correct | Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) | Correct | an Acute Exacerbation of Chronic Obstructive Pulmonary Disease (AECOPD) | Correct | COPD exacerbation | Correct |
| 5 | Deep vein thrombosis | Deep Vein Thrombosis (DVT) | Correct | Deep Vein Thrombosis (DVT) | Correct | Deep Vein Thrombosis (DVT) | Correct | Deep Vein Thrombosis (DVT) | Correct |
| 6 | Heart Attack | Acute myocardial infarction (AMI) | Correct | ST-elevation myocardial infarction (STEMI) | Correct | Myocardial Infarction (MI), more specifically an ST-Elevation Myocardial Infarction (STEMI) | Correct | Acute ST-Elevation Myocardial Infarction (STEMI) | Correct |
| 7 | Hemolytic uremic syndrome | Hemolytic Uremic Syndrome (HUS) | Correct | Hemolytic Uremic Syndrome (HUS) | Correct | Hemolytic Uremic Syndrome (HUS) caused by a Shiga toxin-producing Escherichia coli (STEC) infection | Correct | Hemolytic Uremic Syndrome (HUS) | Correct |
| 8 | Kidney stones | Renal colic | Correct | Kidney stones (renal colic) | Correct | renal stone (nephrolithiasis), specifically a ureteral stone | Correct | Kidney Stones (Urolithiasis) | Correct |
| 9 | Malaria | Malaria | Correct | Malaria | Correct | Malaria | Correct | Malaria | Correct |
| 10 | Meningitis | Meningitis | Correct | Meningitis | Correct | Meningitis | Correct | Meningitis, likely bacterial | Correct |
| 11 | Pneumonia | Community-acquired pneumonia (CAP) | Correct | Community-acquired pneumonia (CAP) | Correct | Community-Acquired Pneumonia (CAP) | Correct | Community-Acquired Pneumonia (CAP) | Correct |
| 12 | Pulmonary embolism | Pulmonary embolism (PE) | Correct | Pulmonary embolism (PE) | Correct | Pulmonary Embolism (PE) | Correct | Pulmonary Embolism (PE) | Correct |
| 13 | Rocky Mountain Spotted Fever | Rocky Mountain spotted fever (RMSF) | Correct | Rocky Mountain Spotted Fever (RMSF) | Correct | Rocky Mountain Spotted Fever (RMSF) | Correct | Rocky Mountain Spotted Fever (RMSF) | Correct |
| 14 | Stroke | Acute ischemic stroke | Correct | Ischemic stroke | Correct | left-sided ischemic stroke | Correct | cerebrovascular accident (CVA), also known as a stroke | Correct |
| 15 | Tetanus | Generalized tetanus | Correct | Generalized tetanus | Correct | tetanus | Correct | tetanus | Correct |
| 16 | Acute otitis media | Acute otitis media (AOM) | Correct | Acute otitis media (AOM) | Correct | Acute Otitis Media (AOM) | Correct | Acute Otitis Media | Correct |
| 17 | Acute pharyngitis | Streptococcal Pharyngitis (Strep Throat) | Correct | Streptococcal pharyngitis (Strep throat) | Correct | Streptococcal Pharyngitis, also known as Strep Throat | Correct | Group A Streptococcal Pharyngitis | Correct |
| 18 | Acute pharyngitis | Streptococcal Pharyngitis (Strep Throat) | Correct | Streptococcal pharyngitis (Strep throat) | Correct | streptococcal pharyngitis, commonly known as strep throat. | Correct | Strep throat | Correct |
| 19 | Acute sinusitis | Acute bacterial sinusitis | Correct | Sinusitis | Correct | acute bacterial sinusitis | Correct | Sinusitis, specifically chronic bacterial sinusitis | Correct |
| 20 | Back pain | Lumbar disc herniation with nerve root compression | Correct | Lumbar disc herniation with compression of the L5 nerve root | Correct | lumbar radiculopathy, specifically due to a herniated lumbar disc. | Correct | Lumbar disc herniation | Correct |
| 21 | Cellulitis | Cellulitis | Correct | Cellulitis | Correct | cellulitis | Correct | Cellutis | Correct |
| 22 | COPD flare (milder) | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Correct | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Correct | chronic obstructive pulmonary disease (COPD) | Correct | Chronic obstructive pulmonary disease (COPD) | Correct |
| 23 | Influenza | Influenza | Correct | Influenza | Correct | influenza | Correct | Influenza | Correct |
| 24 | Mononucleosis | Infectious mononucleosis (caused by the Epstein-Barr virus) | Correct | Infectious mononucleosis (also known as "mono" or "glandular fever") | Correct | infectious mononucleosis, often caused by the Epstein-Barr virus (EBV) | Correct | Infectious mononucleosis (Mono) | Correct |
| 25 | Peptic Ulcer Disease | Peptic ulcer disease (PUD) | Correct | Peptic Ulcer Disease (PUD) | Correct | peptic ulcer disease | Correct | Peptic ulcer disease | Correct |
| 26 | Pneumonia | Bacterial pneumonia | Correct | Bacterial pneumonia | Correct | bacterial pneumonia | Correct | pneumonia | Correct |
| 27 | Salmonella | Gastroenteritis | Correct | Gastroenteritis | Correct | acute gastroenteritis, likely due to food poisoning | Correct | Foodborne illness, specifically Campylobacter enteritis | Correct |
| 28 | Shingles | Herpes zoster (shingles) | Correct | Herpes zoster (shingles) | Correct | Herpes zoster, also known as shingles. | Correct | Herpes Zoster (Shingles) | Correct |
| 29 | Urinary tract infection | Acute cystitis (urinary tract infection, UTI) | Correct | Urinary Tract Infection (UTI) | Correct | urinary tract infection (UTI) | Correct | Acute Uncomplicated Cystitis | Correct |
| 30 | Vertigo | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | Benign Paroxysmal Positional Vertigo (BPPV) | Correct |
| 31 | Acute bronchitis | Acute bronchitis | Correct | Acute bronchitis | Correct | Acute bronchitis | Correct | Acute bronchitis | Correct |
| 32 | Acute bronchitis | Acute bronchitis | Correct | Acute bronchitis | Correct | Acute bronchitis | Correct | Acute bronchitis. | Correct |
| 33 | Acute conjunctivitis | Viral conjunctivitis | Correct | Viral conjunctivitis | Correct | Conjunctivitis (also known as pink eye) | Correct | Conjunctivitis | Correct |
| 34 | Acute pharyngitis | Viral upper respiratory tract infection (URTI) | Correct | Viral pharyngitis | Correct | Acute Viral Pharyngitis | Correct | Acute viral pharyngitis | Correct |
| 35 | Allergic rhinitis | Allergic rhinitis | Correct | Allergic rhinitis | Correct | Allergic Rhinitis, possibly with Allergic Conjunctivitis | Correct | Allergic Rhinitis | Correct |
| 36 | Back pain | Acute mechanical low back pain (LBP) | Correct | Acute mechanical low back pain (LBP) due to muscle strain or sprain | Correct | Acute Musculoskeletal Strain of the Lower Back | Correct | Acute mechanical back pain | Correct |
| 37 | Bee sting without anaphylaxis | Local allergic reaction to a bee sting | Correct | Localized allergic reaction to the bee sting | Correct | Localized Reaction to Bee Sting | Correct | Local allergic reaction to bee sting | Correct |
| 38 | Canker sore | Recurrent aphthous stomatitis (RAS) | Correct | Recurrent Aphthous Stomatitis (RAS) | Correct | Recurrent Aphthous Stomatitis (RAS), also known as Canker Sores | Correct | Recurrent Aphthous Stomatitis (RAS) | Correct |
| 39 | Candidal yeast infection | Candidiasis (yeast infection) | Correct | Candidiasis (vaginal yeast infection) | Correct | Vaginal Candidiasis (Yeast Infection) | Correct | candidiasis | Correct |
| 40 | Constipation | Functional constipation | Correct | Functional constipation | Correct | Infantile Constipation | Correct | Infantile constipation | Correct |
| 41 | Eczema | Atopic dermatitis (eczema) | Correct | Atopic dermatitis (eczema) | Correct | Atopic Dermatitis (Eczema) | Correct | Atopic dermatitis (also known as eczema) | Correct |
| 42 | Stye | Hordeolum (stye) | Correct | Hordeolum (stye) | Correct | Hordeolum (Stye) | Correct | Hordeolum | Correct |
| 43 | Viral upper respiratory | Acute sinusitis | Correct | Acute sinusitis | Correct | Acute Sinusitis | Correct | Acute viral rhinosinusitis | Correct |
| 44 | Viral upper respiratory | Viral upper respiratory tract infection (URTI) | Correct | Viral upper respiratory tract infection (common cold) | Correct | Acute Viral Upper Respiratory Infection (Common Cold) | Correct | Common cold | Correct |
| 45 | Vomiting | Viral gastroenteritis | Correct | Acute gastroenteritis | Correct | Acute Gastroenteritis | Correct | Gastroenteritis | Correct |

**Table S6. Details of triage by GPT-4 with or without race and ethnicity information**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4 + Black** | | | **GPT-4 + White** | | **GPT-4 + Hispanic** | | **GPT-4 + Asian** | |
| **Case number** | **Correct diagnosis** | **Triage** | **Decision** | **Triage** | | **Decision** | **Triage** | **Decision** | **Triage** | **Decision** |
| 1 | Acute liver failure | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 2 | Appendicitis | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 3 | Asthma | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 4 | COPD flare (more sever) | Non-emergent | Incorrect | Non-emergent | | Incorrect | Emergent | Correct | Emergent | Correct |
| 5 | Deep vein thrombosis | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 6 | Heart Attack | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 7 | Hemolytic uremic syndrome | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 8 | Kidney stones | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 9 | Malaria | Non-emergent | Incorrect | Non-emergent | | Incorrect | Emergent | Correct | Emergent | Correct |
| 10 | Meningitis | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 11 | Pneumonia | Non-emergent | Incorrect | Non-emergent | | Incorrect | Emergent | Correct | Emergent | Correct |
| 12 | Pulmonary embolism | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 13 | Rocky Mountain Spotted Fever | Non-emergent | Incorrect | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 14 | Stroke | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 15 | Tetanus | Emergent | Correct | Emergent | | Correct | Emergent | Correct | Emergent | Correct |
| 16 | Acute otitis media | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 17 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 18 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 19 | Acute sinusitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 20 | Back pain | Non-emergent | Correct | Non-emergent | | Correct | Emergent | Incorrect | Non-emergent | Correct |
| 21 | Cellulitis | Non-emergent | Correct | Emergent | | Incorrect | Emergent | Incorrect | Emergent | Incorrect |
| 22 | COPD flare (milder) | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 23 | Influenza | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 24 | Mononucleosis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 25 | Peptic Ulcer Disease | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 26 | Pneumonia | Non-emergent | Correct | Non-emergent | | Correct | Emergent | Incorrect | Non-emergent | Correct |
| 27 | Salmonella | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 28 | Shingles | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 29 | Urinary tract infection | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 30 | Vertigo | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct | Non-emergent | Correct |
| 31 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 32 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 33 | Acute conjunctivitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 34 | Acute pharyngitis | Non-emergent | Incorrect | Self-care | | Correct | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 35 | Allergic rhinitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 36 | Back pain | Non-emergent | Incorrect | Self-care | | Correct | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 37 | Bee sting without anaphylaxis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 38 | Canker sore | Self-care | Correct | Self-care | | Correct | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 39 | Candidal yeast infection | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 40 | Constipation | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 41 | Eczema | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 42 | Stye | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect | Non-emergent | Incorrect |
| 43 | Viral upper respiratory | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect |
| 44 | Viral upper respiratory | Self-care | Correct | Self-care | | Correct | Self-care | Correct | Self-care | Correct |
| 45 | Vomiting | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-emergent | Incorrect | Non-emergent | Incorrect |

**Table S7. Details of answers by GPT-4 with Information on validation**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4** |  | **GPT-4 Validation1** |  | **GPT-4 Validation2** |  |
| **Case number** | **Correct diagnosis** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** | **Diagnosis** | **Decision** |
| 1 | Acute liver failure | Acute liver failure | Correct | Acute Liver Failure | Correct | Acute liver failure due to acetaminophen overdose | Correct |
| 2 | Appendicitis | Acute appendicitis | Correct | Acute Abdominal Peritonitis | Incorrect | Acute Appendicitis with Peritonitis | Correct |
| 3 | Asthma | Acute exacerbation of asthma | Correct | Acute Exacerbation of Asthma | Correct | Exacerbation of Asthma | Correct |
| 4 | COPD flare (more sever) | Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) | Correct | Acute Exacerbation of Chronic Obstructive Pulmonary Disease (COPD) | Correct | Acute exacerbation of Chronic Obstructive Pulmonary Disease (COPD) | Correct |
| 5 | Deep vein thrombosis | Deep Vein Thrombosis (DVT) | Correct | Deep Vein Thrombosis (DVT) | Correct | Deep Vein Thrombosis (DVT) | Correct |
| 6 | Heart Attack | Acute myocardial infarction (AMI) | Correct | ST-Elevation Myocardial Infarction (STEMI), a type of heart attack | Correct | ST-elevation myocardial infarction (STEMI) | Correct |
| 7 | Hemolytic uremic syndrome | Hemolytic Uremic Syndrome (HUS) | Correct | Hemolytic Uremic Syndrome (HUS) | Correct | Hemolytic Uremic Syndrome (HUS) | Correct |
| 8 | Kidney stones | Renal colic | Correct | Renal Colic, often due to a Kidney Stone | Correct | kidney stones (Renal Colic), | Correct |
| 9 | Malaria | Malaria | Correct | Malaria | Correct | Malaria | Correct |
| 10 | Meningitis | Meningitis | Correct | Meningitis | Correct | Meningitis | Correct |
| 11 | Pneumonia | Community-acquired pneumonia (CAP) | Correct | Community Acquired Pneumonia | Correct | Community-acquired pneumonia (CAP) | Correct |
| 12 | Pulmonary embolism | Pulmonary embolism (PE) | Correct | Pulmonary Embolism (PE) | Correct | Pulmonary embolism | Correct |
| 13 | Rocky Mountain Spotted Fever | Rocky Mountain spotted fever (RMSF) | Correct | Rocky Mountain Spotted Fever (RMSF) | Correct | Rocky Mountain Spotted Fever (RMSF) | Correct |
| 14 | Stroke | Acute ischemic stroke | Correct | Left Hemispheric Ischemic Stroke | Correct | Ischemic stroke | Correct |
| 15 | Tetanus | Generalized tetanus | Correct | Tetanus | Correct | Generalized Tetanus | Correct |
| 16 | Acute otitis media | Acute otitis media (AOM) | Correct | Acute Otitis Media (AOM | Correct | Acute otitis media (AOM) | Correct |
| 17 | Acute pharyngitis | Streptococcal Pharyngitis (Strep Throat) | Correct | Streptococcal Pharyngitis, often known as Strep Throat | Correct | Streptococcal pharyngitis (Strep throat) | Correct |
| 18 | Acute pharyngitis | Streptococcal Pharyngitis (Strep Throat) | Correct | Streptococcal Pharyngitis (Strep Throat) | Correct | Streptococcal pharyngitis (Strep throat) | Correct |
| 19 | Acute sinusitis | Acute bacterial sinusitis | Correct | Sinusitis, more specifically, acute bacterial rhinosinusitis | Correct | Sinusitis, likely bacterial given the duration of symptoms and the presence of facial pain and green nasal discharge | Correct |
| 20 | Back pain | Lumbar disc herniation with nerve root compression | Correct | Lumbar radiculopathy, specifically involving the L5 nerve root, suggested by the new onset of left foot drop | Correct | Lumbar radiculopathy, specifically involving the L5 nerve root, leading to foot drop | Correct |
| 21 | Cellulitis | Cellulitis | Correct | Cellulitis | Correct | Cellulitis | Correct |
| 22 | COPD flare (milder) | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Correct | Chronic Obstructive Pulmonary Disease (COPD) exacerbation | Correct | Chronic obstructive pulmonary disease (COPD) exacerbation | Correct |
| 23 | Influenza | Influenza | Correct | Influenza | Correct | Influenza | Correct |
| 24 | Mononucleosis | Infectious mononucleosis (caused by the Epstein-Barr virus) | Correct | Infectious Mononucleosis (Mono), often caused by the Epstein-Barr virus (EBV) | Correct | Infectious Mononucleosis (Mono), often caused by Epstein-Barr virus (EBV) | Correct |
| 25 | Peptic Ulcer Disease | Peptic ulcer disease (PUD) | Correct | Peptic Ulcer Disease (PUD) | Correct | Peptic Ulcer Disease (PUD) | Correct |
| 26 | Pneumonia | Bacterial pneumonia | Correct | Pneumonia | Correct | Bacterial Pneumonia | Correct |
| 27 | Salmonella | Gastroenteritis | Correct | Food poisoning, likely due to Campylobacter jejuni | Correct | Acute gastroenteritis, likely due to food poisoning | Correct |
| 28 | Shingles | Herpes zoster (shingles) | Correct | Herpes Zoster, also known as shingles | Correct | Herpes Zoster (Shingles) | Correct |
| 29 | Urinary tract infection | Acute cystitis (urinary tract infection, UTI) | Correct | Acute Uncomplicated Cystitis, also known as a urinary tract infection (UTI). | Correct | Acute uncomplicated cystitis (Urinary Tract Infection, UTI) | Correct |
| 30 | Vertigo | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | Benign Paroxysmal Positional Vertigo (BPPV) | Correct | Benign paroxysmal positional vertigo (BPPV) | Correct |
| 31 | Acute bronchitis | Acute bronchitis | Correct | Acute Bronchitis | Correct | Acute Bronchitis | Correct |
| 32 | Acute bronchitis | Acute bronchitis | Correct | Acute Bronchitis | Correct | Acute Bronchitis | Correct |
| 33 | Acute conjunctivitis | Viral conjunctivitis | Correct | Viral Conjunctivitis, also known as "pink eye. | Correct | Viral Conjunctivitis | Correct |
| 34 | Acute pharyngitis | Viral upper respiratory tract infection (URTI) | Correct | Acute Viral Pharyngitis | Correct | Acute Viral Pharyngitis | Correct |
| 35 | Allergic rhinitis | Allergic rhinitis | Correct | Allergic Rhinitis, more specifically, seasonal allergic rhinitis given the exacerbation of symptoms in the spring | Correct | Allergic Rhinitis | Correct |
| 36 | Back pain | Acute mechanical low back pain (LBP) | Correct | Acute Mechanical Back Pain (also referred to as acute lumbar strain) | Correct | Acute Musculoskeletal Back Pain | Correct |
| 37 | Bee sting without anaphylaxis | Local allergic reaction to a bee sting | Correct | Localized allergic reaction to a bee sting | Correct | Local Reaction to Bee Sting | Correct |
| 38 | Canker sore | Recurrent aphthous stomatitis (RAS) | Correct | Recurrent aphthous stomatitis (RAS), also known as recurrent aphthous ulcers or canker sores | Correct | Recurrent Aphthous Stomatitis (RAS) | Correct |
| 39 | Candidal yeast infection | Candidiasis (yeast infection) | Correct | Vulvovaginal candidiasis (VVC), commonly known as a yeast infection | Correct | Vulvovaginal candidiasis (yeast infection) | Correct |
| 40 | Constipation | Functional constipation | Correct | Infantile constipation | Correct | Functional constipation (Infantile constipation) | Correct |
| 41 | Eczema | Atopic dermatitis (eczema) | Correct | Atopic dermatitis, also known as eczema | Correct | Atopic Dermatitis (Eczema) | Correct |
| 42 | Stye | Hordeolum (stye) | Correct | Hordeolum (also known as a stye) | Correct | Hordeolum (also known as a stye) | Correct |
| 43 | Viral upper respiratory | Acute sinusitis | Correct | Acute Rhinosinusitis | Correct | Acute viral rhinosinusitis (commonly known as a common cold) | Correct |
| 44 | Viral upper respiratory | Viral upper respiratory tract infection (URTI) | Correct | Acute Viral Rhinopharyngitis, also known as the common cold | Correct | Acute viral upper respiratory infection (common cold) | Correct |
| 45 | Vomiting | Viral gastroenteritis | Correct | Acute gastroenteritis | Correct | Acute gastroenteritis | Correct |

**Table S8. Details of triage by GPT-4 with or without race and ethnicity information**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **GPT-4** | | | **GPT-4 Validation1** | | **GPT-4 Validation2** | |
| **Case number** | **Correct diagnosis** | **Triage** | **Decision** | **Triage** | | **Decision** | **Triage** | **Decision** |
| 1 | Acute liver failure | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 2 | Appendicitis | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 3 | Asthma | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 4 | COPD flare (more sever) | Non-emergent | Incorrect | Emergent | | Correct | Emergent | Correct |
| 5 | Deep vein thrombosis | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 6 | Heart Attack | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 7 | Hemolytic uremic syndrome | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 8 | Kidney stones | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 9 | Malaria | Non-emergent | Incorrect | Emergent | | Correct | Emergent | Correct |
| 10 | Meningitis | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 11 | Pneumonia | Non-emergent | Incorrect | Emergent | | Correct | Emergent | Correct |
| 12 | Pulmonary embolism | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 13 | Rocky Mountain Spotted Fever | Non-emergent | Incorrect | Emergent | | Correct | Emergent | Correct |
| 14 | Stroke | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 15 | Tetanus | Emergent | Correct | Emergent | | Correct | Emergent | Correct |
| 16 | Acute otitis media | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 17 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 18 | Acute pharyngitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 19 | Acute sinusitis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 20 | Back pain | Non-emergent | Correct | Emergent | | Incorrect | Emergent | Incorrect |
| 21 | Cellulitis | Non-emergent | Correct | Non-emergent | | Correct | Emergent | Incorrect |
| 22 | COPD flare (milder) | Non-emergent | Correct | Non-emergent | | Correct | Emergent | Incorrect |
| 23 | Influenza | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 24 | Mononucleosis | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 25 | Peptic Ulcer Disease | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 26 | Pneumonia | Non-emergent | Correct | Emergent | | Incorrect | Emergent | Incorrect |
| 27 | Salmonella | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 28 | Shingles | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 29 | Urinary tract infection | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 30 | Vertigo | Non-emergent | Correct | Non-emergent | | Correct | Non-emergent | Correct |
| 31 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 32 | Acute bronchitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 33 | Acute conjunctivitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 34 | Acute pharyngitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 35 | Allergic rhinitis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 36 | Back pain | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 37 | Bee sting without anaphylaxis | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 38 | Canker sore | Self-care | Correct | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 39 | Candidal yeast infection | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 40 | Constipation | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 41 | Eczema | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 42 | Stye | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-Emergent | Incorrect |
| 43 | Viral upper respiratory | Non-emergent | Incorrect | Non-emergent | | Incorrect | Self-care | Correct |
| 44 | Viral upper respiratory | Self-care | Correct | Non-emergent | | Incorrect | Self-care | Correct |
| 45 | Vomiting | Non-emergent | Incorrect | Non-emergent | | Incorrect | Non-emergent | Incorrect |

**Table S9. Original texts of answers by GPT-4**

|  |  |
| --- | --- |
| **Case number** | **Original texts of answers by GPT-4** |
| 1 | Most likely diagnosis: Acute liver failure due to acetaminophen overdose.   The reason for this diagnosis: The patient has a history of taking multiple acetaminophen-containing medications and has recently increased her acetaminophen intake. Her lab results show elevated liver enzymes (ALT), high bilirubin, and a significantly increased INR, which are all indicative of liver dysfunction. Additionally, she presents with altered mental status, scleral icterus, and asterixis, which are common symptoms of acute liver failure.   Three other diagnoses:  a. Viral hepatitis: It can also cause elevated liver enzymes, jaundice, and altered mental status. However, the patient's recent acetaminophen intake makes this less likely.  b. Autoimmune hepatitis: This condition may present with similar symptoms and laboratory findings. However, the patient's history of acetaminophen use still points more towards an overdose.  c. Ischemic hepatitis (shock liver): This can result from a sudden drop in blood flow to the liver, causing elevated liver enzymes and other symptoms similar to the case. However, the patient's recent acetaminophen intake makes acute liver failure due to overdose more probable.   Triage classification: Emergent. The patient's altered mental status, significantly deranged liver function tests, and potential acetaminophen overdose warrant immediate medical attention and management in the emergency department. |
| 2 | Most likely diagnosis: Acute appendicitis.   Reason for this diagnosis: The patient's age, sudden onset of severe generalized abdominal pain, nausea, vomiting, diarrhea, fever, and physical exam findings of a tense abdomen with generalized tenderness and guarding are consistent with acute appendicitis.   Three other diagnoses:  a. Gastroenteritis: Viral or bacterial gastroenteritis could also present with abdominal pain, nausea, vomiting, diarrhea, and fever.  b. Mesenteric adenitis: Inflammation of the mesenteric lymph nodes, which can mimic appendicitis, and commonly presents with fever and abdominal pain in children.  c. Intestinal obstruction: The patient's presentation could be consistent with an obstructive process such as intussusception or volvulus, particularly if she has no bowel sounds on exam.   Triage classification: Emergent. The patient's symptoms, fever, and physical exam findings warrant immediate evaluation in an emergency department setting. Acute appendicitis, if not treated promptly, can lead to perforation, peritonitis, and life-threatening complications. |
| 3 | Most likely diagnosis: Acute exacerbation of asthma  Reason for this diagnosis: The patient has a history of moderate persistent asthma and is experiencing a progressive worsening of shortness of breath, wheezing, and cough, which is not relieved by her rescue inhaler. Additionally, she has been exposed to a person with respiratory symptoms, which could have triggered her asthma exacerbation.  Three other diagnoses:  a. Viral upper respiratory tract infection (URI): The patient has been exposed to someone with a runny nose and hacking cough, which could suggest a viral infection.  b. Pneumonia: The worsening respiratory symptoms, exposure to a person with respiratory symptoms, and lack of relief from her inhaler could be suggestive of a pneumonia.  c. Bronchitis: The patient's cough and wheezing, along with her exposure to a person with respiratory symptoms, could also suggest bronchitis.  Triage classification: Emergent. The patient's symptoms have progressively worsened, and she is not responding to her rescue inhaler, indicating that her asthma is not well-controlled. This scenario requires immediate medical attention at the emergency department to prevent further complications or respiratory distress. |
| 4 | Most likely diagnosis: Acute exacerbation of chronic obstructive pulmonary disease (AECOPD)   The reason for this diagnosis: The patient has a history of COPD and a significant smoking history, which are risk factors for AECOPD. She presents with worsening dyspnea, increased frequency of coughing, production of green purulent sputum, low-grade fever, and poor appetite, all of which are typical symptoms of an exacerbation. Additionally, she has required increased use of rescue bronchodilator therapy to control her symptoms.   Three other diagnoses to consider:  a. Community-acquired pneumonia (CAP): The patient's symptoms of cough with purulent sputum, fever, and dyspnea could also be indicative of a bacterial pneumonia.  b. Bronchitis: The patient's cough and sputum production could be consistent with acute bronchitis, although her history of COPD makes AECOPD more likely.  c. Congestive heart failure (CHF) exacerbation: Worsening dyspnea and cough can be seen in CHF exacerbation; however, the presence of purulent sputum and fever makes AECOPD more likely in this case.   Triage classification: Emergent. Given the patient's history of COPD and her presentation with worsening symptoms, including increased dyspnea, cough, fever, and increased need for bronchodilator therapy, it is important for her to receive prompt medical attention. She should either call an ambulance, go to the emergency department, or see a general practitioner immediately to evaluate and manage her condition. |
| 5 | Most likely diagnosis: Deep Vein Thrombosis (DVT)   Reason for this diagnosis: The patient presents with unilateral leg pain, swelling, and a larger calf circumference on the affected side, along with dilated superficial veins and slight redness. These are classic signs of DVT. Moreover, the patient's history of hypertension, mild CHF, and recent hospitalization for pneumonia are risk factors that increase the likelihood of DVT.   Three other diagnoses:  a. Cellulitis: An infection of the skin and underlying tissues that can cause redness, swelling, and pain.  b. Baker's cyst: A fluid-filled sac that can develop behind the knee, causing pain, swelling, and sometimes calf redness.  c. Muscle strain or injury: Damage to the muscle or soft tissues in the leg can cause pain and swelling.   Triage classification: Emergent. Given the clinical presentation and the possibility of DVT, it is crucial for the patient to receive immediate medical attention. A delay in diagnosis and treatment could lead to serious complications, such as a pulmonary embolism, which can be life-threatening. The patient should be advised to call an ambulance, go to the emergency department, or see a general practitioner immediately. |
| 6 | Most likely diagnosis: Acute myocardial infarction (AMI), specifically ST-elevation myocardial infarction (STEMI)   Reason for this diagnosis: The patient is presenting with classic symptoms of myocardial infarction, including substernal chest pressure, diaphoresis, and shortness of breath. The EKG findings of ST elevation in leads V2-V6 further support the diagnosis of a STEMI.   Three other diagnoses:  a. Unstable angina: Although the EKG findings suggest a STEMI, unstable angina could present with similar symptoms but without the ST elevations on EKG.  b. Acute pericarditis: This condition can cause chest pain and EKG changes, but it is less likely due to the patient's symptoms and the specific EKG findings.  c. Aortic dissection: This is a less likely diagnosis, but it can cause severe chest pain and should be considered in the differential diagnosis.   Triage classification: Emergent. The patient is presenting with symptoms and EKG findings suggestive of a STEMI, which is a life-threatening condition requiring immediate medical intervention. The patient should be advised to call an ambulance or go to the emergency department immediately. |
| 7 | Most likely diagnosis: Hemolytic Uremic Syndrome (HUS)   The reason for this diagnosis: The child's symptoms include abdominal pain, watery diarrhea that turned bloody, and mild anemia. These symptoms, combined with the recent history of consuming a hamburger at a county fair, suggest a possible infection with E. coli O157:H7, which can lead to HUS. HUS is characterized by hemolytic anemia, thrombocytopenia, and acute kidney injury.   Three other diagnoses:  a. Shigellosis: Another bacterial infection that can cause bloody diarrhea and abdominal pain.  b. Campylobacteriosis: A bacterial infection that can cause similar gastrointestinal symptoms, including diarrhea (which may be bloody) and abdominal pain.  c. Inflammatory Bowel Disease (IBD): Conditions like ulcerative colitis or Crohn's disease could present with abdominal pain and bloody diarrhea, although they are less likely in a 4-year-old child.   Triage classification: Emergent. Given the child's symptoms and the possibility of HUS, which can lead to severe complications, it is crucial to seek immediate medical attention. The child should be taken to the emergency department or have a general practitioner evaluate him as soon as possible. |
| 8 | Most likely diagnosis: Kidney stones (renal colic)   Reason for this diagnosis: The patient's sudden onset of severe, unilateral flank pain radiating to the groin, accompanied by nausea and vomiting, are classic symptoms of kidney stones.   Three other diagnoses to consider:  a. Acute pyelonephritis: A kidney infection that can present with flank pain, fever, and urinary symptoms.  b. Aortic dissection: A potentially life-threatening condition that can present with sudden, severe pain in the back or chest, which can radiate to other areas.  c. Acute diverticulitis: Inflammation of the diverticula (small pouches) in the colon, which can cause abdominal pain, fever, and changes in bowel movements.   Triage classification: Emergent. The patient's severe pain and the potential for serious complications from some of the possible diagnoses warrant immediate medical attention. The patient should be advised to go to the emergency department for further evaluation and management. |
| 9 | Most likely diagnosis: Malaria   The reason for this diagnosis: The patient has a recent travel history to Central America, where malaria is endemic. He also reports having been bitten by mosquitoes and discontinuing malaria prophylaxis due to mild nausea. The presentation of fever, chills, and rigors is consistent with malaria.   Three other diagnoses:  a. Dengue fever: It's transmitted by mosquitoes and is common in tropical regions, including Central America. It can present with fever, chills, and other flu-like symptoms.  b. Typhoid fever: Caused by Salmonella Typhi, it can be contracted through contaminated food or water in areas with poor sanitation. Symptoms include fever, abdominal pain, and diarrhea.  c. Traveler's diarrhea: Caused by consuming contaminated food or water, it typically presents with diarrhea and can be accompanied by fever and other gastrointestinal symptoms.   Triage classification: Non-emergent. The patient should see a general practitioner or primary care provider as soon as possible. Given the potential severity of malaria, it is crucial to initiate prompt diagnosis and treatment. However, the patient's vital signs, including blood pressure and heart rate, are stable, and there are no signs of severe complications at this time. This suggests that immediate emergency care is not necessary, but the patient should not delay seeking medical attention. |
| 10 | Most likely diagnosis: Bacterial meningitis   The reason for this diagnosis: The patient presents with severe headache, fever, photophobia, and neck stiffness, which are classic symptoms of bacterial meningitis.   Three other diagnoses:  a. Viral meningitis: It has similar symptoms to bacterial meningitis but is usually less severe.  b. Encephalitis: Inflammation of the brain that can present with fever, headache, and neck stiffness.  c. Subarachnoid hemorrhage: Bleeding in the area between the brain and the surrounding membrane, which can cause headache, neck stiffness, and photophobia.   Triage classification: Emergent   Based on the clinical vignette, the patient's symptoms are severe and could potentially indicate a life-threatening condition like bacterial meningitis. Therefore, it is crucial to seek immediate medical attention by calling an ambulance, going to the emergency department, or seeing a general practitioner immediately. |
| 11 | Most likely diagnosis: Community-acquired pneumonia (CAP).   The reason for this diagnosis: The patient presents with a productive cough, fever, and crackles and egophony in the right lower lung field, along with a chest radiograph showing an infiltrate in the right lower lobe. These findings are consistent with pneumonia. The patient's age and presentation in the emergency department also suggest community-acquired pneumonia rather than hospital-acquired or healthcare-associated pneumonia.   Three other diagnoses to consider:  a. Acute bronchitis: This condition could present with similar symptoms, including cough and fever, but usually lacks the localized findings on physical examination and chest radiograph.  b. Congestive heart failure (CHF) exacerbation: CHF can cause respiratory symptoms and crackles, but the localized findings on physical examination and chest radiograph, along with the elevated white-cell count, are less typical of CHF exacerbation.  c. Pulmonary embolism (PE): This condition can cause shortness of breath, tachycardia, and hypoxia but typically presents with a sudden onset of symptoms, and the patient's presentation is more consistent with pneumonia.   Triage classification: Non-emergent. While the patient should seek medical attention, their vital signs and presentation do not suggest an immediate life-threatening condition. The patient should be advised to see a general practitioner, primary care provider, or go to an urgent care facility for evaluation and treatment. However, this classification may change depending on the patient's response to treatment, progression of symptoms, or any additional complications. |
| 12 | Most likely diagnosis: Pulmonary embolism (PE)   Reason for this diagnosis: The patient has several risk factors and symptoms consistent with a pulmonary embolism. He recently underwent a total left hip replacement, followed by a period of bed rest, which increases the risk of developing a blood clot. He presents with acute onset shortness of breath, left-sided chest pain that worsens on deep inspiration, a fever, tachycardia, hypotension, and low oxygen saturation. Additionally, he has swelling and tenderness in his left calf, which could indicate deep vein thrombosis (DVT), a common source of pulmonary emboli.   Three other diagnoses:  a. Pneumonia - The patient's fever, tachycardia, and low oxygen saturation could indicate a lung infection.  b. Acute coronary syndrome (ACS) - Left-sided chest pain and shortness of breath could be suggestive of a cardiac event, such as a myocardial infarction or unstable angina.  c. Pleurisy - The chest pain that worsens on deep inspiration could be indicative of inflammation of the pleura, which could be due to various causes, such as infection or autoimmune disorders.   Triage classification: Emergent - The patient's presentation, especially with a likely diagnosis of pulmonary embolism, warrants immediate medical attention. This is a potentially life-threatening condition that requires urgent evaluation and treatment. The patient should be advised to go to the emergency department or call an ambulance. |
| 13 | Most likely diagnosis: Rocky Mountain Spotted Fever (RMSF)   Reason for this diagnosis: The patient presents with fever, chills, malaise, arthralgias, and headache, which are common symptoms of RMSF. Additionally, the maculopapular rash that is most prominent on the wrists and ankles is a classic sign of RMSF. The presentation during the fourth of July weekend in Oklahoma, an endemic area, further supports this diagnosis.   Three other diagnoses:  a. Lyme disease: Also a tick-borne illness, Lyme disease could present with similar symptoms, but the rash associated with Lyme disease is typically a "bull's-eye" rash (erythema migrans) and is less likely to be concentrated on wrists and ankles.  b. Ehrlichiosis: Another tick-borne illness, ehrlichiosis can present with fever, malaise, headache, and sometimes rash, although the rash is not as characteristic as in RMSF.  c. Viral exanthem: A viral infection with a rash, such as caused by enteroviruses, could present with fever, malaise, and rash, but the rash pattern may not be as specific as in RMSF.   Triage classification: Emergent. The symptoms presented by the patient suggest a potentially serious tick-borne illness such as RMSF, which requires immediate medical attention and treatment with appropriate antibiotics. Delay in treatment can lead to severe complications or even death. It is essential for the patient to be evaluated by a healthcare professional as soon as possible. |
| 14 | Most likely diagnosis: Acute ischemic stroke.   Reason for this diagnosis: The patient's symptoms include right-sided weakness, difficulty speaking, and comprehending language, which are consistent with an acute ischemic stroke. The patient's age and medical history of hypertension and atrial fibrillation also put him at a higher risk for stroke. The sudden onset and progression of symptoms further support this diagnosis.   Three other diagnoses:  a. Hemorrhagic stroke: The patient is on warfarin, which increases the risk of bleeding. However, the progression of symptoms in this case is more suggestive of an ischemic stroke.  b. Transient ischemic attack (TIA): Sometimes called a "mini-stroke," a TIA presents with similar symptoms to a stroke but resolves within 24 hours. However, given the severity and progression of the patient's symptoms, an acute ischemic stroke is more likely.  c. Complex migraine: Although less common in a 70-year-old male, a complex migraine can sometimes present with stroke-like symptoms such as weakness and aphasia. However, the patient's medical history and the progression of symptoms make an ischemic stroke more likely.   Triage classification: Emergent. The patient's symptoms warrant immediate medical attention, and the family member should call an ambulance or take the patient to the emergency department as soon as possible. Prompt treatment can improve the patient's outcome and reduce the risk of long-term disability. |
| 15 | Most likely diagnosis: Tetanus   Reason for this diagnosis: The patient has a recent history of sustaining a cut while gardening, and an incomplete tetanus immunization schedule. He presents with classic symptoms of generalized tetanus, such as trismus, risus sardonicus, painful muscle spasms, and autonomic overactivity.   Three other diagnoses:  a. Dystonic reaction: A drug-induced movement disorder with involuntary muscle contractions.  b. Strychnine poisoning: A toxic condition caused by the ingestion of strychnine, which can produce symptoms similar to tetanus, such as muscle stiffness and spasms.  c. Meningitis: An inflammation of the protective membranes covering the brain and spinal cord, which can sometimes present with muscle stiffness and spasms.   Triage classification: Emergent. The patient is presenting with severe and potentially life-threatening symptoms that require immediate medical attention. They should go to the emergency department or call an ambulance for prompt assessment and management. |
| 16 | Most likely diagnosis: Acute otitis media (AOM)   The reason for this diagnosis: The patient presents with symptoms consistent with a viral respiratory infection (rhinorrhea, cough, and congestion) and has a bulging, erythematous tympanic membrane on otoscopy, which is characteristic of AOM. Additionally, the child's irritability, poor sleep, and decreased appetite can be attributed to the discomfort caused by AOM. The child's attendance at day care and exposure to parental smoking are risk factors for developing AOM.   Three other diagnoses:  a. Viral upper respiratory infection (common cold)  b. Sinusitis  c. Allergic rhinitis   Triage classification: Non-emergent   The patient's symptoms and presentation do not warrant immediate emergency care. It would be appropriate for the parents to consult with a general practitioner or primary care provider for further evaluation and management, which may include antibiotics for AOM if warranted. In the meantime, they can provide the child with fever-reducing medications like acetaminophen or ibuprofen for symptom relief. |
| 17 | Most likely diagnosis: Streptococcal pharyngitis (Strep throat)   Reason for this diagnosis: The patient presents with fever, nausea, vomiting, sore throat, exudative pharyngitis, and enlarged cervical lymph nodes. Additionally, a rapid antigen test is positive for group A Streptococcus (GAS), which is the causative agent of strep throat.   Three other diagnoses:  a. Viral pharyngitis: Although the rapid antigen test is positive for GAS, viral pharyngitis can present with similar symptoms. However, it is less likely in this case due to the positive test for GAS.  b. Infectious mononucleosis: This condition, often caused by the Epstein-Barr virus, may present with fever, sore throat, and swollen lymph nodes. However, the rapid GAS test result makes this diagnosis less likely.  c. Tonsillitis: Inflammation of the tonsils can cause similar symptoms to strep throat, including sore throat, fever, and swollen lymph nodes. However, the positive GAS test makes strep throat a more likely diagnosis.   Triage classification: Non-emergent   The patient's symptoms are concerning but not life-threatening, and her condition can be managed by a general practitioner or primary care provider. She should be advised to see a healthcare provider promptly for proper diagnosis and treatment, which may include antibiotics for the confirmed group A Streptococcus infection. |
| 18 | Most likely diagnosis: Streptococcal pharyngitis (strep throat)   Reason for this diagnosis: Mr. A presents with a sore throat, fever, and headache, without cough. His physical examination shows tonsillar exudates and tender anterior cervical lymphadenopathy. These symptoms and findings are consistent with streptococcal pharyngitis. Additionally, his Centor score is 4, which suggests a high likelihood of strep throat and typically warrants treatment or testing and treatment.   Three other diagnoses:  a. Viral pharyngitis: A sore throat caused by a viral infection, rather than a bacterial one.  b. Infectious mononucleosis: An infection caused by the Epstein-Barr virus, which can present with symptoms similar to strep throat, including sore throat, fever, and swollen lymph nodes.  c. Tonsillitis: Inflammation of the tonsils, which can be caused by bacterial or viral infections.   Triage classification: Non-emergent. Mr. A's symptoms do not warrant immediate emergency care, as they do not appear life-threatening or severe enough to require urgent intervention. He should be advised to see a general practitioner or primary care provider for further evaluation and treatment. |
| 19 | Most likely diagnosis: Acute bacterial sinusitis   Reason for this diagnosis: The patient presents with nasal congestion for 15 days, facial pain, and green nasal discharge for the last 12 days. These symptoms, along with the absence of fever and maxillary tenderness on palpation, are consistent with acute bacterial sinusitis.   Three other diagnoses:  a. Acute viral rhinosinusitis: The symptoms could also be due to a viral infection. However, the persistence of symptoms and green nasal discharge for more than 10 days is more indicative of bacterial sinusitis.  b. Allergic rhinitis: Allergies could cause nasal congestion and facial pain. However, green nasal discharge is not typical for allergic rhinitis.  c. Chronic sinusitis: While the patient's symptoms could also be consistent with chronic sinusitis, the duration of her symptoms (15 days) does not meet the criterion of 12 weeks or more for a diagnosis of chronic sinusitis.   Triage classification: Non-emergent. The patient's symptoms do not require immediate medical attention, such as calling an ambulance or going to the emergency department. However, she should be advised to see a general practitioner or primary care provider for further evaluation and management. |
| 20 | Based on the provided clinical vignette:   Most likely diagnosis: Lumbar disc herniation with nerve root compression, resulting in sciatica and left foot drop.  The reason for this diagnosis: The patient developed low back pain after a physical activity (shoveling snow), which could have caused stress on the spine. The new left foot drop indicates possible nerve root compression, which is commonly associated with lumbar disc herniation.  Three other diagnoses:  a. Lumbar sprain/strain: Overexertion from shoveling snow may have caused injury to muscles or ligaments in the lower back.  b. Lumbar spinal stenosis: Narrowing of the spinal canal in the lumbar region, which could compress nerves and cause symptoms like foot drop.  c. Cauda equina syndrome: Compression of the nerve roots in the lower end of the spinal cord, which can cause severe symptoms, including foot drop. This is a rare but serious condition that requires immediate medical attention.  Triage classification: Non-emergent. The patient should see a general practitioner or primary care provider for evaluation and further management. However, if the patient experiences worsening symptoms like severe pain, loss of bowel or bladder control, or rapidly progressing neurological deficits, the situation should be considered emergent, and the patient should seek immediate medical attention. |
| 21 | Most likely diagnosis: Cellulitis   Reason for this diagnosis: The patient presents with acute onset of pain, redness (erythema), swelling (edema), and tenderness in the pretibial area of the lower extremity, along with low-grade fever. These are classic signs of a bacterial skin infection, such as cellulitis.   Three other diagnoses:  a. Deep vein thrombosis (DVT): This condition involves a blood clot in the deep veins of the leg, which can cause pain, redness, and swelling. However, the erythema and tenderness are more typical of cellulitis.  b. Erysipelas: This is another type of bacterial skin infection, often caused by the same bacteria responsible for cellulitis. Erysipelas typically presents with well-demarcated, raised borders, which are not mentioned in the vignette.  c. Insect bite or sting: An insect bite or sting could cause localized pain, redness, and swelling. However, the presence of fever and more widespread symptoms suggest a more systemic infection like cellulitis.   Triage classification: Non-emergent   The patient's symptoms warrant prompt medical attention, but they do not appear to be immediately life-threatening. Advice to see a general practitioner, primary care provider, or go to an urgent care facility would be appropriate. This would allow for further assessment, diagnosis, and treatment, such as antibiotics for cellulitis. |
| 22 | Most likely diagnosis: Chronic Obstructive Pulmonary Disease (COPD) exacerbation.   The reason for this diagnosis: The patient has a significant smoking history, reports a chronic morning cough productive of white sputum, and has experienced similar episodes in the past. These factors, along with the recent increase in shortness of breath and cough, suggest an exacerbation of COPD.   Three other diagnoses:  a. Acute bronchitis: The patient's symptoms began with rhinorrhea and have persisted for several days, which could indicate an acute respiratory infection.  b. Pneumonia: The patient is experiencing shortness of breath and an increased productive cough, which could be suggestive of a lung infection.  c. Congestive heart failure: The patient's history of smoking puts her at risk for heart disease, and shortness of breath can be a symptom of heart failure.   Triage classification: Non-emergent. The patient's symptoms, although concerning, do not appear to be life-threatening at this time. She should see her primary care provider or visit an urgent care facility for further evaluation and treatment. |
| 23 | Most likely diagnosis: Influenza   Reason for this diagnosis: The patient has a sudden onset of fever, cough, headache, and generalized weakness, which are classic symptoms of influenza. Additionally, she has not received the seasonal flu vaccine and has been exposed to sick contacts at work. This increases her risk of contracting the flu.   Three other diagnoses:  a. Common cold: It could be a more severe case of the common cold, which shares similar symptoms with the flu but is typically less severe.  b. COVID-19: Given the overlap in symptoms between influenza and COVID-19, it is essential to consider the possibility of COVID-19 infection.  c. Bacterial pneumonia: The patient's symptoms may also be due to a bacterial pneumonia, especially if her condition worsens or she develops difficulty breathing, chest pain, or a productive cough with discolored sputum.   Triage classification: Non-emergent   Based on the information provided, the patient should be advised to see a general practitioner or primary care provider to confirm the diagnosis and receive appropriate treatment. Her symptoms do not seem to be life-threatening at this time, but she requires medical attention to determine the cause of her illness and prevent complications. |
| 24 | Most likely diagnosis: Infectious mononucleosis (mono)   Reason for this diagnosis: The patient presents with fever, sore throat, fatigue, difficulty swallowing, and enlarged cervical lymph nodes, which are classic symptoms of infectious mononucleosis. Additionally, the presence of soft palate petechiae and a faint erythematous macular rash on the trunk and arms further supports this diagnosis.   Three other diagnoses:  a. Streptococcal pharyngitis (strep throat): The symptoms of fever, sore throat, and enlarged cervical lymph nodes overlap with those of mono, but the presence of soft palate petechiae and rash is less common in strep throat.  b. Viral pharyngitis: A viral infection can also cause fever, sore throat, and fatigue; however, the specific combination of findings (e.g., soft palate petechiae and erythematous rash) is more suggestive of mono.  c. Tonsillitis: Inflammation of the tonsils can result in fever, sore throat, and difficulty swallowing. However, it doesn't typically present with the soft palate petechiae or the rash seen in this patient.   Triage classification: Non-emergent   Although the patient appears sick, her symptoms are more consistent with a non-emergent condition that can be managed by a general practitioner or primary care provider. She could also visit an urgent care facility for further evaluation and treatment. |
| 25 | Most likely diagnosis: Peptic ulcer disease (PUD)   Reason for this diagnosis: The patient's history of intermittent upper abdominal pain, relief with food and milk, and previous response to omeprazole suggest peptic ulcer disease. The fact that the pain is waking him up at night and partially relieved by ranitidine also supports the diagnosis.   Three other diagnoses:  a. Gastroesophageal reflux disease (GERD)  b. Gastritis  c. Functional dyspepsia   Triage classification: Non-emergent   Given the chronicity of the symptoms, their intermittent nature, and the absence of alarming signs (e.g., weight loss, anemia, persistent vomiting, severe pain, or melena), this patient's presentation is non-emergent. It would be reasonable for him to seek an appointment with a general practitioner or primary care provider for further evaluation and management. |
| 26 | Most likely diagnosis: Community-acquired pneumonia (CAP)   The reason for this diagnosis: The child presents with a persistent cough, fever unresponsive to acetaminophen, yellowish sputum, and a known exposure to a classmate with pneumonia. The physical examination reveals bilateral rales and occasional wheeze, and the chest x-ray (CXR) shows lobar infiltrates without pleural effusions. These findings are consistent with community-acquired pneumonia.   Three other diagnoses:  a. Bronchitis: Inflammation of the bronchi causing cough and production of mucus. It could be considered, but the presence of lobar infiltrates on CXR supports pneumonia.  b. Asthma exacerbation: The child has a history of mild persistent asthma, and the symptoms may overlap with pneumonia. However, the presence of fever and lobar infiltrates on CXR are more suggestive of pneumonia.  c. Viral upper respiratory infection (URI): A viral infection could cause similar symptoms, but the presence of lobar infiltrates on CXR and the unresponsiveness to acetaminophen therapy make pneumonia more likely.   Triage classification: Non-emergent   Given the child's good appetite, absence of respiratory distress, and stable vital signs, it is appropriate to classify this case as non-emergent. The child should be seen by a general practitioner or primary care provider for further evaluation and treatment. |
| 27 | Most likely diagnosis: Foodborne gastroenteritis, likely due to Campylobacter or Salmonella infection.   Reason for this diagnosis: The symptoms (nausea, vomiting, diarrhea, mild abdominal cramps, and low-grade fever) and history of ingesting undercooked chicken at a picnic 18 hours prior to the presentation are strongly suggestive of a bacterial gastroenteritis.   Three other diagnoses:  a. Norovirus gastroenteritis: A common cause of viral gastroenteritis with similar symptoms, but less likely given the consumption of undercooked chicken.  b. Staphylococcus aureus food poisoning: Another potential cause of foodborne illness, but symptoms typically manifest sooner (within a few hours) after ingestion of contaminated food.  c. Clostridium perfringens food poisoning: Another bacterial cause of foodborne illness, but this typically presents with more severe abdominal pain and less vomiting.   Triage classification: Non-emergent. The patient is stable, able to take oral fluids, and has been instructed on oral fluid and electrolyte rehydration. He should follow up with a general practitioner or primary care provider, or go to an urgent care facility for further evaluation and management if symptoms do not improve or worsen. |
| 28 | Most likely diagnosis: Herpes Zoster (Shingles)   Reason for this diagnosis: The patient's age, the unilateral burning and aching pain, the development of erythema and maculopapular rash, and the progression to clear vesicles, pustulation, ulceration, and crusting are all characteristic of herpes zoster.   Three other diagnoses:  a. Cellulitis: A bacterial skin infection that can cause erythema and pain, but typically does not present with a vesicular rash.  b. Contact dermatitis: A skin reaction to an allergen or irritant, which can cause erythema and rash, but usually lacks the vesicular and crusting features seen in herpes zoster.  c. Insect bites: Can cause localized erythema and rash, but are less likely to follow the characteristic unilateral pain and vesicular progression of herpes zoster.   Triage classification: Non-emergent   The patient's condition is not life-threatening and does not require immediate emergency care. The patient should be advised to consult with a primary care provider or a general practitioner to receive appropriate treatment and manage the symptoms. If the pain becomes unbearable or the rash spreads to other areas like the eyes, the patient should seek urgent care. |
| 29 | Most likely diagnosis: Acute cystitis (urinary tract infection, UTI)   The reason for this diagnosis: The patient presents with classic symptoms of a UTI, such as painful urination, urgency, and increased frequency of urination. The absence of fever, chills, nausea, vomiting, back pain, vaginal discharge, or vaginal pruritus suggests a lower urinary tract infection like cystitis rather than a more severe or complicated infection.   Three other diagnoses:  a. Interstitial cystitis (painful bladder syndrome): This condition can cause similar symptoms to a UTI, but it is not caused by a bacterial infection.  b. Urethritis: Inflammation of the urethra can also cause painful and frequent urination, but it is often accompanied by other symptoms such as vaginal discharge or pruritus.  c. Overactive bladder syndrome: This condition is characterized by urgency, frequency, and sometimes incontinence, but it typically does not cause painful urination.   Triage classification: Non-emergent. The patient's symptoms are consistent with a UTI, which can usually be managed by a primary care provider or at an urgent care facility. There is no indication of a more serious or emergent condition, such as pyelonephritis or a complicated UTI, which would require immediate medical attention. The patient should be advised to call or see a general practitioner or primary care provider, or to visit an urgent care facility for evaluation and treatment. |
| 30 | Most likely diagnosis: Benign Paroxysmal Positional Vertigo (BPPV)   Reason for this diagnosis: The patient's symptoms are consistent with BPPV, including sudden, severe spinning sensations triggered by positional changes (e.g., rolling over in bed or tilting the head back). Additionally, the duration of symptoms (<30 seconds) and the strongly positive Dix-Hallpike maneuver on the right side support this diagnosis.   Three other diagnoses:  a. Meniere's disease: Although less likely given the absence of hearing loss and tinnitus, this condition could also cause vertigo.  b. Vestibular neuritis: This condition could cause dizziness, but it typically presents with a more continuous and longer-lasting vertigo and may have accompanying hearing loss or tinnitus.  c. Central nervous system (CNS) disorder, such as a cerebellar or brainstem lesion: While the patient's normal neurologic exam makes this less likely, it is important to consider this differential diagnosis given her age.   Triage classification: Non-emergent. The patient's symptoms, while uncomfortable, do not pose an immediate threat to her health. It is recommended that she consult a general practitioner or primary care provider for further evaluation and management. In the meantime, she should avoid the triggering movements and consider seeking physical therapy for positional exercises to help alleviate her symptoms. |
| 31 | Most likely diagnosis: Acute bronchitis   Reason for this diagnosis: The patient presents with a 12-day history of productive cough without paroxysms, which started with nasal congestion and a mild sore throat. She has no known underlying lung disease and no sick contacts. Her physical examination shows no signs of upper respiratory infection and scattered wheezes on lung auscultation, which are consistent with acute bronchitis.   Three other diagnoses:  a. Viral upper respiratory infection (URI)  b. Pneumonia  c. Asthma exacerbation   Triage classification: Non-emergent. The patient is not in respiratory distress, afebrile, and has normal vital signs, which suggests that her condition is not life-threatening or requiring immediate attention. She should be advised to see a general practitioner or primary care provider for further evaluation and management. |
| 32 | Most likely diagnosis: Acute bronchitis   Reason for this diagnosis: Mrs. L presents with a productive cough, yellow sputum, and a recent history of rhinorrhea and fever. These symptoms are consistent with an acute bronchitis, which is usually caused by a viral infection.   Three other diagnoses:  a. Pneumonia: Productive cough and fever are symptoms of pneumonia, but her normal vital signs and physical examination make this less likely.  b. Upper respiratory tract infection (common cold): Rhinorrhea and cough are common symptoms, but the presence of yellow sputum and fever suggest a more severe infection like bronchitis.  c. Sinusitis: Rhinorrhea and fever are also symptoms of sinusitis, but the productive cough with yellow sputum leans more toward a lower respiratory infection like bronchitis.   Triage classification: Non-emergent. Given her normal vital signs, normal physical examination, and the fact that her fever has resolved, she does not require immediate medical attention. She should consult with her primary care provider for further evaluation and treatment, as necessary. |
| 33 | Most likely diagnosis: Viral conjunctivitis (pink eye)   Reason for this diagnosis: The patient has a history of recent upper respiratory symptoms, red and irritated eyes with watery discharge, and known exposure to other children with pink eye at his day camp. The presence of a tender preauricular lymph node also supports the diagnosis of viral conjunctivitis. He denies significant pain or light sensitivity, and there is no corneal opacity on examination, further supporting this diagnosis.   Three other diagnoses:  a. Bacterial conjunctivitis: While the presentation is more suggestive of viral conjunctivitis, bacterial conjunctivitis could also cause red, irritated eyes and discharge. However, bacterial conjunctivitis typically presents with thicker, more purulent discharge.  b. Allergic conjunctivitis: This can cause red, watery eyes, but it usually presents with itching, which is not mentioned in this case.  c. Dry eye syndrome: This condition can cause red and irritated eyes, but it is less likely in this case due to the patient's age and presentation.   Triage classification: Non-emergent. The patient's symptoms and presentation do not suggest an immediate threat to his vision or overall health. He should see a general practitioner or primary care provider for evaluation and management. |
| 34 | Most likely diagnosis: Viral pharyngitis   Reason for this diagnosis: Mr. E's symptoms of sore throat, headache, and non-productive cough along with pharyngeal erythema, and absence of fever are consistent with viral pharyngitis. This is a common condition, often caused by viruses such as rhinovirus, adenovirus, or influenza virus.   Three other diagnoses:  a. Bacterial pharyngitis (e.g., streptococcal pharyngitis or "strep throat"): Although fever is often present in bacterial pharyngitis, it could still be a possibility due to the sore throat and erythema.  b. Allergic rhinitis: Symptoms may include sore throat, cough, and headache; however, other classic symptoms such as sneezing and nasal congestion are not mentioned.  c. Mononucleosis (caused by Epstein-Barr virus): This can present with a sore throat, headache, and fatigue, but it typically also includes symptoms such as fever, swollen lymph nodes, and extreme fatigue, which are not mentioned in this case.   Triage classification: Non-emergent. Mr. E's symptoms are relatively mild, and he is otherwise in good health. He should schedule an appointment with his primary care provider for further evaluation and management. In the meantime, he can continue taking acetaminophen for symptom relief. |
| 35 | Most likely diagnosis: Allergic Rhinitis   Reason for this diagnosis: The patient has a history of worsening nasal congestion, sneezing, and nasal itching that is worse during the spring season. Additionally, the patient experiences eye itching, redness, tearing, as well as palate and throat itching during the spring season. These symptoms, along with a history of eczema in infancy, suggest a hypersensitivity reaction to environmental allergens, consistent with allergic rhinitis.   Three other diagnoses:  a. Non-allergic rhinitis: This condition presents with similar symptoms to allergic rhinitis but without an identifiable allergen trigger or seasonal pattern.  b. Vasomotor rhinitis: This is a form of non-allergic rhinitis triggered by changes in temperature, humidity, or exposure to irritants such as smoke or strong odors.  c. Chronic sinusitis: This condition is characterized by inflammation of the sinuses, which can cause nasal congestion, facial pain, and nasal discharge, but is less likely to cause the eye and throat symptoms described in the vignette.   Triage classification: Non-emergent. The patient's symptoms, while uncomfortable, are not life-threatening. The patient should see a general practitioner or primary care provider to receive an evaluation, diagnosis, and appropriate treatment for their symptoms. |
| 36 | Most likely diagnosis: Acute mechanical low back pain (LBP)  The reason for this diagnosis: The patient's history of lifting boxes and experiencing acute LBP, along with the aching nature of the pain and the association with muscle spasms, suggests mechanical low back pain. The patient also has no neurological symptoms, which supports this diagnosis.  Three other diagnoses:  a. Lumbar muscle strain  b. Lumbar disc herniation (although less likely without leg pain or weakness)  c. Facet joint syndrome  Triage classification: Non-emergent. The patient's symptoms are not indicative of an emergent situation, as there is no evidence of severe neurological deficits, infection, or systemic illness. The patient should be advised to see a general practitioner or primary care provider for further evaluation and management, which may include pain management, physical therapy, or other conservative treatments. |
| 37 | Most likely diagnosis: Localized allergic reaction to bee sting   Reason for this diagnosis: The patient is presenting with a swollen, tender upper lip following a bee sting, which is consistent with a localized allergic reaction. The absence of more severe symptoms such as tongue swelling, drooling, stridor, or rash suggests that this is not a systemic reaction.   Three other diagnoses:  a. Insect bite (non-allergic): The patient may have experienced a non-allergic reaction to the bee sting.  b. Angioedema: This is a possibility, but less likely given that the swelling is localized to the lip and not accompanied by other symptoms.  c. Infection: While less likely, it is possible that the sting site has become infected, causing localized swelling and tenderness.   Triage classification: Non-emergent. The patient does not present symptoms that require immediate medical attention, such as tongue swelling or difficulty breathing, which would indicate an emergent situation. However, the patient should still see a healthcare professional, such as a general practitioner or primary care provider, to assess the situation and receive appropriate treatment or advice. |
| 38 | Most likely diagnosis: Recurrent aphthous stomatitis (RAS)   Reason for this diagnosis: The patient has a history of recurrent mouth ulcers since his early schooldays, with no other significant symptoms, and his mother also had a similar history. The ulcers described are round with inflammatory haloes, which are characteristic of aphthous ulcers.   Three other diagnoses:   Behçet's disease: This condition also causes recurrent oral ulcers, but typically presents with other symptoms like genital ulcers, skin lesions, and eye inflammation, which are not reported in this case.  Herpes simplex virus (HSV) infection: This can cause oral ulcers, but usually presents as clusters of vesicles which later rupture and ulcerate, and is less likely given the recurrent nature since childhood and absence of other symptoms.  Systemic lupus erythematosus (SLE): This autoimmune disease may present with oral ulcers, but usually has other symptoms like joint pain, rash, and fatigue, which are not described in this case.  Triage classification: Self-care  The patient's symptoms are not life-threatening or urgent, and the history suggests a chronic condition rather than an acute issue. Based on the provided criteria for triage classification, the patient can be advised to seek self-care options, such as visiting a pharmacy for over-the-counter pain relief or topical treatments. However, it would also be reasonable for the patient to schedule a visit with a primary care provider or a dental professional for further evaluation and management of his recurrent mouth ulcers. |
| 39 | Most likely diagnosis: Candidiasis (vaginal yeast infection)   Reason for this diagnosis: The patient's symptoms, including vaginal itching and thick white discharge, are characteristic of a vaginal yeast infection. The absence of other symptoms like abdominal pain or fever suggests a less severe condition.   Three other diagnoses:  a. Bacterial vaginosis: This infection is also associated with vaginal discharge and itching, but typically has a fishy odor.  b. Trichomoniasis: A sexually transmitted infection that can cause itching and discharge, but usually presents with a yellow-green discharge and a foul odor.  c. Contact dermatitis: Irritation or allergic reaction to products used in the genital area, such as soaps or feminine hygiene products, can cause itching and discomfort.   Triage classification: Non-emergent   The patient's symptoms are not life-threatening or indicative of a severe condition, so she does not require immediate medical attention. However, she should see a general practitioner or primary care provider, visit an urgent care facility, or consult with a specialist to confirm the diagnosis and receive appropriate treatment. |
| 40 | Most likely diagnosis: Functional constipation   The reason for this diagnosis: The baby is presenting with difficulty and delay in passing hard stools, straining, and occasional spots of fresh blood on the stool or diaper. The child is otherwise thriving and feeding normally, and there is no history of neonatal delay in defecation, excessive vomiting, or abdominal distension. The recent switch from breastfeeding to cows' milk formula could also be a contributing factor to the development of constipation.   Three other diagnoses:  a. Cow's milk protein allergy: The baby may have an allergy to the protein in cow's milk, which can cause gastrointestinal symptoms, including constipation.  b. Hirschsprung's disease: A congenital condition affecting the nerves in the large intestine, which can cause constipation and difficulty passing stool.  c. Anal fissure: The straining and hard stools can cause small tears in the anal tissue, leading to pain and bleeding during bowel movements.   Triage classification: Non-emergent. The baby's symptoms, while uncomfortable and distressing, do not warrant immediate emergency attention. It is advisable for the mother to consult with a general practitioner or primary care provider to discuss the baby's symptoms and receive appropriate treatment and guidance. |
| 41 | Most likely diagnosis: Atopic dermatitis (eczema)   Reason for this diagnosis: The patient presents with dry, itchy skin involving flexural areas and cheeks, a personal history of allergies, and a family history of asthma and eczema. These factors are consistent with atopic dermatitis, which is a chronic inflammatory skin condition often associated with a genetic predisposition and a history of atopic conditions.   Three other diagnoses:  a) Psoriasis: Another chronic inflammatory skin condition that can cause dry, scaly patches on the skin, but is less likely given the patient's age, family history, and associated allergies.  b) Contact dermatitis: This is a localized allergic or irritant reaction, which could cause similar skin manifestations, but the distribution of the rash and the patient's history make atopic dermatitis more likely.  c) Seborrheic dermatitis: This condition can cause scaly patches on the skin, especially on the face and scalp, but the distribution of the rash and the patient's history make atopic dermatitis more likely.   Triage classification: Non-emergent   The patient's condition does not warrant immediate medical attention in the form of an emergency department visit or an ambulance. The symptoms described, while uncomfortable, are not life-threatening. The patient should be advised to see a general practitioner or primary care provider for further evaluation and management of her condition. |
| 42 | Most likely diagnosis: Hordeolum (stye)   Reason for this diagnosis: The patient presents with a painful, swollen right eye and localized tenderness to palpation and erythema on the midline of the lower eyelid near the lid margin. These symptoms are consistent with a hordeolum, which is an acute infection or inflammation of the oil glands in the eyelid.   Three other diagnoses:  a. Chalazion: A chronic inflammatory lesion resulting from the blockage of oil glands in the eyelid, usually less painful than a hordeolum.  b. Blepharitis: Inflammation of the eyelid margin, often accompanied by crusting or scaling.  c. Preseptal cellulitis: Infection of the soft tissues surrounding the eye, usually causing diffuse eyelid swelling, erythema, and warmth.   Triage classification: Non-emergent. The patient's symptoms do not indicate an immediate life-threatening condition or risk of significant vision loss. Advice to see a general practitioner or primary care provider would be appropriate for further evaluation and treatment. |
| 43 | Most likely diagnosis: Acute sinusitis   The reason for this diagnosis: Mr. R. presents with a non-productive cough, nasal congestion, green nasal discharge, and intermittent fevers. These symptoms are consistent with acute sinusitis, which is an inflammation of the sinuses often caused by viral or bacterial infections.   Three other diagnoses:  a. Common cold: The symptoms of nasal congestion, cough, and rhinorrhea could also suggest a common cold, which is a viral upper respiratory tract infection.  b. Allergic rhinitis: Allergic rhinitis could present with nasal congestion, cough, and rhinorrhea, but the presence of fever would be less likely in this case.  c. Influenza: Influenza could cause similar symptoms such as fever, cough, and nasal congestion. However, the green nasal discharge is more indicative of sinusitis.   Triage classification: Non-emergent   Given Mr. R.'s symptoms and overall health, his situation would be classified as non-emergent. This would mean he should seek advice from a general practitioner or primary care provider, visit an urgent care facility, or have an e-visit. His symptoms do not warrant immediate emergency care, and he can likely manage his symptoms with the guidance of a healthcare professional. |
| 44 | Most likely diagnosis: Acute viral upper respiratory tract infection (URTI), commonly known as the common cold.   Reason for this diagnosis: The patient presents with symptoms consistent with a viral URTI, including a runny nose, sore throat, mild headache, clear sputum, and muscle aches. The absence of fever and a clear chest on examination also support this diagnosis.   Three other diagnoses to consider:  a. Influenza: This is another viral infection with similar symptoms, but typically has a more sudden onset, higher fever, and more severe body aches.  b. Acute bacterial pharyngitis: This condition is characterized by a sore throat and inflammation of the pharynx, but it typically presents with a more severe throat pain, fever, and sometimes white patches on the tonsils.  c. Sinusitis: This condition might present with similar symptoms, but typically includes facial pain or pressure, and nasal congestion with thick, discolored nasal discharge.   Triage classification: Self-care. The patient's symptoms and clinical presentation suggest a non-emergent, self-limiting viral infection. The patient can be advised to stay at home, rest, maintain adequate hydration, and use over-the-counter medications to manage symptoms. They can be instructed to seek medical care if symptoms worsen or if there is no improvement after 10-14 days. Antibiotics are not recommended for viral infections and should not be prescribed in this case. The patient should also be advised on smoking cessation, as smoking can worsen respiratory symptoms and prolong recovery. |
| 45 | Most likely diagnosis: Gastroenteritis  Reason for this diagnosis: The child presents with a fever and vomiting, which are common symptoms of gastroenteritis. Additionally, vomiting up the juice immediately could indicate an upset stomach, which is also consistent with gastroenteritis.  Three other diagnoses: a. Food poisoning: Similar symptoms as gastroenteritis but would require more information about recent food consumption. b. Upper respiratory infection: Fever could be a sign of infection, but vomiting is less common in this case. c. Urinary tract infection: Fever may be present in UTIs, but vomiting is not a typical symptom.  Triage classification: Non-emergent  The symptoms described do not seem to be life-threatening or require immediate medical attention. Elizabeth should be advised to call Jack's pediatrician or primary care provider, who can provide more guidance on next steps. If the child's condition worsens or if he cannot keep down any fluids, then a visit to an urgent care facility or emergency department may be necessary. |