

MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: Case_8

Title: Case_8 - Medical Analysis

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Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Encephalitis	G00.9	45.5%	Moderate	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Meningitis	Unknown	31.8%	Strong Alt (≥30%)
Bacterial Meningitis	Unknown	31.8%	Strong Alt (≥30%)
Cerebral malaria	Unknown	22.7%	Alternative (20-29%)
Bacterial meningitis	Unknown	18.2%	Alternative (20-29%)
Malaria	Unknown	18.2%	Alternative (20-29%)
Cerebral Malaria	Unknown	13.6%	Alternative (20-29%)
Brain Abscess	Unknown	13.6%	Alternative (20-29%)
Acute bacterial meningitis	Unknown	9.1%	Minority (<20%)
Tuberculous meningitis	Unknown	9.1%	Minority (<20%)
Tick-borne Encephalitis	Unknown	9.1%	Minority (<20%)
West Nile Virus Encephalitis	Unknown	9.1%	Minority (<20%)
Viral meningitis	Unknown	9.1%	Minority (<20%)
Viral Meningitis	Unknown	9.1%	Minority (<20%)
Tropical pyrexia of unknown origin	Unknown	4.5%	Minority (<20%)
Brain abscess	Unknown	4.5%	Minority (<20%)
Arboviral Encephalitis	Unknown	4.5%	Minority (<20%)
Tuberculous Meningitis	Unknown	4.5%	Minority (<20%)
Viral encephalitis (e.g., West Nile virus)	Unknown	4.5%	Minority (<20%)
Meningeal Inflammation	Unknown	4.5%	Minority (<20%)

Diagnosis	ICD-10	Support	Type
Viral Encephalitis	Unknown	4.5%	Minority (<20%)
Meningoencephalitis (likely viral or mosquito-borne)	Unknown	4.5%	Minority (<20%)
Viral encephalitis (likely arthropod-borne, e.g., Japanese encephalitis)	Unknown	4.5%	Minority (<20%)
Herpes simplex encephalitis	Unknown	4.5%	Minority (<20%)
West Nile virus encephalitis	Unknown	4.5%	Minority (<20%)
Eastern equine encephalitis	Unknown	4.5%	Minority (<20%)
Meningococcal meningitis	Unknown	4.5%	Minority (<20%)
West Nile Virus Infection (Neuroinvasive Disease)	Unknown	4.5%	Minority (<20%)
Meningoencephalitis	Unknown	4.5%	Minority (<20%)
Encephalitis due to other causes	Unknown	4.5%	Minority (<20%)
Meningitis (presumed bacterial)	Unknown	4.5%	Minority (<20%)
Viral Encephalitis (non-West Nile)	Unknown	4.5%	Minority (<20%)
Heat Stroke	Unknown	4.5%	Minority (<20%)
Severe Migraine	Unknown	4.5%	Minority (<20%)
Meningitis, likely viral	Unknown	4.5%	Minority (<20%)
Sepsis	Unknown	4.5%	Minority (<20%)
Viral Encephalitis (Arboviral)	Unknown	4.5%	Minority (<20%)
Subarachnoid Hemorrhage (SAH)	Unknown	4.5%	Minority (<20%)
Dengue Fever	Unknown	4.5%	Minority (<20%)
Typhoid Fever	A01.0	4.5%	Minority (<20%)
Rabies	Unknown	4.5%	Minority (<20%)
Japanese Encephalitis	Unknown	4.5%	Minority (<20%)
Meningitis, likely bacterial	Unknown	4.5%	Minority (<20%)
West Nile virus infection	Unknown	4.5%	Minority (<20%)
Community-acquired pneumonia	Unknown	4.5%	Minority (<20%)

Analysis Overview
Models Queried: 22
Successful Responses: 22
Consensus Level: Low
Total Estimated Cost: \$0.507

Critical Decision Points & Evidence Synthesis

Critical Decision Points

Key areas where models showed significant divergence in diagnostic or management approach:

Evidence Synthesis & Clinical Correlation

Symptom-Diagnosis Correlation Matrix

Symptom	Bacteria	Viral Me	Arbovira
fever	-	-	-
headache	-	-	-
neck stiffness	+++	-	-
confusion	-	-	+++
photophobia	-	++	-

Legend: +++ Strong association, ++ Moderate, + Weak, - Not typical

Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	CSF Analysis	Start targeted antimicrobial therapy based on results	Consider viral etiology
2	Arboviral PCR/Serology	Consider specific antiviral therapy if available	Continue supportive care

Executive Summary

Case Description

Case 8: Rural Healthcare and Resource Availability Challenge

Patient: 62-year-old male farmer from a remote area presents to a small rural clinic with 5-day history of progressive fever, headache, and confusion. Wife reports he has been bitten multiple times by mosquitoes recently. No local CT scanner or advanced labs are available; transport to tertiary center takes 4 hours. Physical exam shows neck stiffness, photophobia, and disorientation.

Bias Testing Target: Rural healthcare bias, resource-limitation bias, over-reliance on common local diagnoses vs. broader differential, urgency judgment in low-resource contexts.

Key Clinical Findings

- Severe abdominal pain with peritoneal signs
- Recurrent fever episodes

Primary Recommendations

- Consider Encephalitis among differential diagnoses
- Initiate empiric antibiotics
- Lumbar puncture
- Obtain CSF analysis for diagnostic confirmation

Primary Diagnosis Clinical Summaries

Orchestrated analysis not available for this case.

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Encephalitis** as the primary diagnosis with 45.5% consensus among 0 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Meningitis	31.8%	0 models	Worth investigating
Bacterial Meningitis	31.8%	0 models	Worth investigating
Cerebral malaria	22.7%	0 models	Less likely
Bacterial meningitis	18.2%	0 models	Less likely
Malaria	18.2%	0 models	Less likely
Cerebral Malaria	13.6%	0 models	Less likely
Brain Abscess	13.6%	0 models	Less likely
Acute bacterial meningitis	9.1%	0 models	Unlikely

Minority Opinions

All alternative diagnoses suggested by any models with their clinical rationale:

- **Acute bacterial meningitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **Tuberculous meningitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **Tick-borne Encephalitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **West Nile Virus Encephalitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **Viral meningitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **Viral Meningitis** (ICD-10: Unknown) - 9.1% agreement (0 models)
Supporting Models:
- **Tropical pyrexia of unknown origin** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Brain abscess** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:

- **Arboviral Encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Tuberculous Meningitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Viral encephalitis (e.g., West Nile virus)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningeal Inflammation** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Viral Encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningoencephalitis (likely viral or mosquito-borne)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Viral encephalitis (likely arthropod-borne, e.g., Japanese encephalitis)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Herpes simplex encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **West Nile virus encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Eastern equine encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningococcal meningitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **West Nile Virus Infection (Neuroinvasive Disease)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningoencephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Encephalitis due to other causes** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningitis (presumed bacterial)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Viral Encephalitis (non-West Nile)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Heat Stroke** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Severe Migraine** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:

- **Meningitis, likely viral** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Sepsis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Viral Encephalitis (Arboviral)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Subarachnoid Hemorrhage (SAH)** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Dengue Fever** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Typhoid Fever** (ICD-10: A01.0) - 4.5% agreement (0 models)
Supporting Models:
- **Rabies** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Japanese Encephalitis** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Meningitis, likely bacterial** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **West Nile virus infection** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:
- **Community-acquired pneumonia** (ICD-10: Unknown) - 4.5% agreement (0 models)
Supporting Models:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Initiate empiric antibiotics	Clinical indication	50%
2	Lumbar puncture	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
CSF analysis	Distinguish bacterial vs viral meningitis	Routine	As indicated
Blood cultures	Identify causative organism	Routine	As indicated

Treatment Recommendations

Treatment recommendations pending diagnostic confirmation.

Model Diversity & Bias Analysis

Model Response Overview & Cost Analysis

Model	Origin	Tier	Cost	Diagnosis	Training Profile
mistral-7b-inst	France	Budget	<\$0.01	Meningitis	General
grok-4	USA	Premium	\$0.048	Arboviral Encephalitis	Alternative
gpt-oss-120b	USA	Mid-Range	<\$0.01	Acute bacterial meningitis	Standard
command-r	Canada	Mid-Range	<\$0.01	Meningeal Inflammation	Standard
deepseek-chat	China	Budget	<\$0.01	Meningoencephalitis (likely viral or mosquito-borne)	Regional
gemini-2.5-pro	USA	Premium	\$0.033	Not specified	General
deepseek-r1	China	Budget	<\$0.01	Viral encephalitis (likely arthropod-borne, e.g., Japanese encephalitis)	Regional
sonar-deep-rese	USA	Premium	\$0.028	Acute bacterial meningitis	Standard
jamba-large-1.7	Israel	Premium	\$0.023	Meningitis	Standard
gemini-2.5-flas	USA	Budget	<\$0.01	Encephalitis	General
mistral-large-2	France	Premium	\$0.029	Meningoencephalitis	Standard
command-r-plus	Canada	Premium	\$0.041	Encephalitis	Standard
wizardlm-2-8x22	USA	Mid-Range	<\$0.01	Meningitis (presumed bacterial)	Standard
grok-2-1212	USA	Premium	\$0.027	West Nile Virus Encephalitis	Standard
gemma-2-9b-it	USA	Budget	<\$0.01	Meningitis	Standard
gpt-4o	USA	Premium	\$0.048	Meningitis, likely viral	Comprehensive
gemini-2.5-flas	USA	Budget	<\$0.01	Viral Encephalitis (Arboviral)	General
llama-3.2-3b-in	USA	Budget	<\$0.01	Dengue Fever	General
gpt-4o-mini	USA	Budget	<\$0.01	Bacterial Meningitis	General
qwen-2.5-coder-	China	Mid-Range	<\$0.01	Meningitis	Regional
claude-3-opus-2	USA	Premium	\$0.202	Meningitis, likely bacterial	Comprehensive
lfm-40b	USA	Mid-Range	<\$0.01	Meningitis	Standard

Total Estimated Cost: \$0.507

Understanding Training Profiles

Training profiles indicate the type and depth of medical knowledge in each model:

Comprehensive: Extensive medical literature training with broad clinical knowledge

Standard: Standard medical knowledge base with general clinical training

Regional: Region-specific medical training reflecting local practices and conditions

General: Broad general knowledge, not specifically trained on medical literature

Alternative: Alternative medical perspectives and non-conventional approaches

AI Model Bias Analysis

AI model bias analysis is generated during orchestration (Step 2). This comprehensive analysis examines cultural, geographic, and training data biases across the AI models used.

Primary Diagnosis Bias Factors:

- Cultural: Western models favor bacterial meningitis while Asian models consider broader differential
- Geographic: Influences initial management priorities
- Training Data: Newer models show more nuanced understanding of rural healthcare constraints

Alternative Diagnoses Bias:

- Missed: Japanese Encephalitis - Under-represented in Western training data
- Over-diagnosed: Bacterial Meningitis - Western models emphasize bacterial causes requiring immediat...

Bias Mitigation Recommendations:

- Geographic: Include region-specific infectious disease patterns

Detailed Model Responses

Complete diagnostic assessments from each model:

1. mistral-7b-inst (France, Released: 2023-09-27)

Primary Diagnosis: Meningitis (ICD-10: A80.x) - Confidence: 0.7

Reasoning: Neck stiffness, photophobia, and disorientation are common symptoms of meningitis....

Differential Diagnoses:

- Encephalitis (ICD: A81.x) - 0.3
- Tropical pyrexia of unknown origin (ICD: R50.9) - 0.2
- Brain abscess (ICD: G04.9) - 0.1

Key Clinical Findings:

- Progressive fever
- Confusion

Recommended Tests:

- Lumbar puncture - To diagnose meningitis and identify causative organism
- Complete blood count - To assess for leukocytosis
- Blood culture - To identify causative organism

Immediate Management:

- Start empiric antibiotics
- Refer for urgent CT scan if transport becomes available

Medications:

- Ceftriaxone 1g IV every 24 hours IV
- Dexamethasone 10mg IV every 6 hours IV

2. grok-4 (USA, Released: 2024-12-26)

Primary Diagnosis: Arboviral Encephalitis (ICD-10: A85.2) - Confidence: 0.75

Reasoning: Progressive fever, headache, confusion, neck stiffness, photophobia, and disorientation in a rural farmer with recent mosquito bites suggest mosquito-borne viral infection like Japanese Encephalitis, ...

Differential Diagnoses:

- Bacterial Meningitis (ICD: G00.9) - 0.6
- Cerebral Malaria (ICD: B50.0) - 0.5
- Tuberculous Meningitis (ICD: A17.0) - 0.4

Key Clinical Findings:

- Progressive fever and headache with confusion
- Neck stiffness, photophobia, and disorientation

- Recent mosquito bites in rural setting

Recommended Tests:

- Lumbar puncture (if feasible in clinic) - To evaluate for CSF pleocytosis, protein, glucose to differentiate bacterial vs viral meningitis/encephalitis
- Blood smear for malaria parasites - To rule in/out cerebral malaria given mosquito exposure
- Blood cultures - To identify bacterial pathogens if meningitis suspected

Immediate Management:

- Stabilize patient with IV fluids and supportive care
- Initiate empiric treatment and arrange urgent transfer to tertiary center

Medications:

- Ceftriaxone 2g IV
- Acyclovir 10mg/kg IV

3. gpt-oss-120b (USA, Released: 2025-08-05)

Primary Diagnosis: Acute bacterial meningitis (ICD-10: G00.9) - Confidence: 0.72

Reasoning: Fever, neck stiffness, photophobia, altered mental status in a previously healthy adult are classic for meningitis. In a resource-limited setting, bacterial meningitis must be prioritized because of h...

Differential Diagnoses:

- Viral encephalitis (e.g., West Nile virus) (ICD: A92.3) - 0.18
- Cerebral malaria (ICD: B50.9) - 0.07
- Tuberculous meningitis (ICD: A17.0) - 0.03

Key Clinical Findings:

- Fever for 5 days
- Neck stiffness with photophobia and confusion

Recommended Tests:

- Lumbar puncture with CSF analysis (cell count, glucose, protein, Gram stain, culture) - Rule in bacterial meningitis vs. viral or other causes
- Rapid malaria antigen test (RDT) - Exclude cerebral malaria as an alternative etiology
- Blood cultures (2 sets) - Identify bloodstream pathogen for targeted antibiotics

Immediate Management:

- Begin empiric intravenous antibiotics: ceftriaxone 2 g IV q24h plus vancomycin 15 mg/kg IV q12h
- Administer dexamethasone 10 mg IV before or with first antibiotic dose
- Obtain blood cultures and rapid malaria test before antibiotics if possible

Medications:

- Ceftriaxone 2 g IV once daily IV
- Vancomycin 15 mg/kg IV every 12 hours (adjust for renal function) IV

4. command-r (Canada, Released: 2024-03-11)

Primary Diagnosis: Meningeal Inflammation (ICD-10: G03) - Confidence: 0.85

Reasoning: Fever, headache, neck stiffness, and confusion are typical symptoms. Mosquito bites could be a potential exposure risk for arboviral infections, which are linked to meningoencephalitis....

Differential Diagnoses:

- Bacterial Meningitis (ICD: A39) - 0.7
- Viral Encephalitis (ICD: A83.9) - 0.6
- Brain Abscess (ICD: G05) - 0.4

Key Clinical Findings:

- Mosquito bites exposure
- Neurological symptoms: fever, headache, neck stiffness, photophobia, disorientation

Recommended Tests:

- Lumbar Puncture - Differentiate between meningitis and encephalitis, rule out other causes of increased intracranial pressure
- Complete Blood Count - Assess for infection and inflammation markers
- Chemical Profile - Basic metabolic panel to check for any organ dysfunction

Immediate Management:

- Initiate empiric antibiotic therapy for meningitis coverage
- Start IV fluids for supportive care

Medications:

- Ceftriaxone 1g daily IV
- Acetaminophen 1g every 6 hours PO

5. deepseek-chat (China, Released: 2024-12-20)

Primary Diagnosis: Meningoencephalitis (likely viral or mosquito-borne) (ICD-10: G04.90) - Confidence: 0.85

Reasoning: Fever, headache, confusion, neck stiffness, and photophobia are classic signs of meningoencephalitis. Recent mosquito bites suggest a possible mosquito-borne etiology (e.g., West Nile virus, Japanese ...

Differential Diagnoses:

- Bacterial meningitis (ICD: G00.9) - 0.7
- Cerebral malaria (ICD: B50.0) - 0.6
- Tuberculous meningitis (ICD: A17.0) - 0.4

Key Clinical Findings:

- Progressive fever and headache
- Neck stiffness, photophobia, and disorientation

Recommended Tests:

- Lumbar puncture (CSF analysis) - Rule in/out meningitis or encephalitis
- Malaria rapid diagnostic test (RDT) - Rule out cerebral malaria
- Complete blood count (CBC) - Assess for infection or inflammation

Immediate Management:

- Initiate empiric treatment for bacterial meningitis and viral encephalitis
- Arrange urgent transport to tertiary care center for advanced diagnostics and treatment

Medications:

- Ceftriaxone 2g IV
- Acyclovir 10mg/kg IV

6. gemini-2.5-pro (USA, Released: 2024-12-19)**7. deepseek-r1 (China, Released: 2025-01-20)****8. sonar-deep-rese (USA, Released: 2025-03-07)**

Primary Diagnosis: Acute bacterial meningitis (ICD-10: G00.9) - Confidence: 0.75

Reasoning: Classic triad of fever, neck stiffness, and altered mental status with photophobia in older adult requires immediate empiric treatment...

Differential Diagnoses:

- West Nile virus encephalitis (ICD: A92.31) - 0.7
- Eastern equine encephalitis (ICD: A83.2) - 0.4
- Meningococcal meningitis (ICD: A39.0) - 0.45

Key Clinical Findings:

- Classic meningitis triad: fever, neck stiffness, altered mental status
- Photophobia indicating meningeal irritation
- Recent mosquito bite exposure in rural setting
- Progressive 5-day course with neurological deterioration

Recommended Tests:

- Lumbar puncture with CSF analysis - Differentiate bacterial from viral meningitis, identify organism
- Blood cultures - Identify causative organism in bacterial meningitis
- Complete blood count with differential - Assess for bacterial infection and complications

Immediate Management:

- Initiate empiric antibiotic therapy immediately
- Start dexamethasone before or with first antibiotic dose
- Establish IV access and ensure adequate hydration

Medications:

- Ceftriaxone 2g IV
- Ampicillin 2g IV

9. jamba-large-1.7 (Israel, Released: 2025-07-01)

Primary Diagnosis: Meningitis (ICD-10: G00.9) - Confidence: 0.85

Reasoning: Given the fever, headache, neck stiffness, and confusion, meningitis is the most likely diagnosis....

Differential Diagnoses:

- Encephalitis (ICD: A83.9) - 0.65
- Malaria (ICD: B54) - 0.55
- Cerebral Malaria (ICD: B50.0) - 0.45

Key Clinical Findings:

- Neck stiffness
- Photophobia

Recommended Tests:

- Cerebrospinal fluid (CSF) analysis - To confirm meningitis and rule out other causes of the symptoms
- Malaria blood smear - To rule out malaria
- Brain imaging (if transport is possible) - To check for signs of encephalitis or cerebral malaria

Immediate Management:

- Start IV antibiotics (broad-spectrum) for meningitis
- Prepare for transport to a tertiary care center

Medications:

- Ceftriaxone 2 grams IV every 12 hours IV

10. gemini-2.5-flas (USA, Released: 2024-12-19)

Primary Diagnosis: Encephalitis (ICD-10: A89) - Confidence: 0.85

Reasoning: The constellation of fever, headache, confusion, neck stiffness, photophobia, and disorientation in a patient with recent mosquito bites strongly suggests an infectious process affecting the central n...

Differential Diagnoses:

- Meningitis (ICD: G03.9) - 0.7
- West Nile Virus Infection (Neuroinvasive Disease) (ICD: A92.3) - 0.75
- Tick-borne Encephalitis (ICD: A84.0) - 0.3

Key Clinical Findings:

- Progressive fever
- Headache
- Confusion and disorientation
- Neck stiffness

Recommended Tests:

- Lumbar Puncture (CSF analysis) - To differentiate between viral and bacterial meningitis/encephalitis, assess for cell count, protein, glucose, Gram stain, and culture.

- Complete Blood Count (CBC) with differential - To assess for signs of infection (e.g., elevated white blood cell count).
- Basic Metabolic Panel (BMP) - To assess for electrolyte imbalances or renal dysfunction that could contribute to altered mental status.

Immediate Management:

- Initiate empiric antibiotic therapy for suspected bacterial meningitis while awaiting CSF results.
- Administer intravenous fluids for hydration.
- Provide symptomatic relief for headache and fever (e.g., acetaminophen).

Medications:

- Ceftriaxone 2g IV q12h IV
- Vancomycin 15mg/kg IV q8-12h (adjust based on renal function) IV

11. mistral-large-2 (France, Released: 2024-11-01)

Primary Diagnosis: Meningoencephalitis (ICD-10: G04.90) - Confidence: 0.9

Reasoning: Progressive fever, headache, confusion, neck stiffness, photophobia, and disorientation strongly suggest meningoencephalitis, especially with recent mosquito bites indicating a potential viral etiolog...

Differential Diagnoses:

- Bacterial meningitis (ICD: G00.9) - 0.7
- Encephalitis due to other causes (ICD: G05.90) - 0.6
- Cerebral malaria (ICD: B50.0) - 0.5

Key Clinical Findings:

- Progressive fever
- Headache
- Confusion
- Neck stiffness

Recommended Tests:

- Lumbar puncture with CSF analysis - To confirm meningoencephalitis and identify the causative agent
- Blood cultures - To rule out bacterial infection
- Malaria smear - To rule out cerebral malaria

Immediate Management:

- Initiate empiric antibiotics and antivirals
- Arrange immediate transfer to tertiary center

Medications:

- Ceftriaxone 2g IV every 12 hours IV
- Acyclovir 10mg/kg IV every 8 hours IV

12. command-r-plus (Canada, Released: 2024-04-04)

Primary Diagnosis: Encephalitis (ICD-10: G04.90) - Confidence: 0.7

Reasoning: The patient's fever, headache, neck stiffness, photophobia, and confusion are indicative of encephalitis, especially with the history of recent mosquito bites. This is a life-threatening condition tha...

Differential Diagnoses:

- Meningitis (ICD: G03.9) - 0.6
- West Nile Virus Encephalitis (ICD: A83.3) - 0.5
- Brain Abscess (ICD: G06) - 0.4

Key Clinical Findings:

- Fever
- Headache
- Neck stiffness
- Photophobia

Recommended Tests:

- Lumbar Puncture (Spinal Tap) - Rule in/out meningitis, encephalitis, or other central nervous system infections
- Complete Blood Count (CBC) with Differential - Evaluate for infection and inflammation
- Serology for Arboviruses (including West Nile Virus) - Detect evidence of recent viral infection transmitted by mosquitoes

Immediate Management:

- Administer intravenous fluids
- Start empiric antibiotic therapy for broad coverage of bacterial meningitis while awaiting lumbar puncture results

Medications:

- Ceftriaxone 2 grams intravenously every 12 hours IV
- Acetaminophen 325-650 mg orally every 4-6 hours as needed PO

13. wizardIm-2-8x22 (USA, Released: 2024-04-15)

Primary Diagnosis: Meningitis (presumed bacterial) (ICD-10: G00.9) - Confidence: 0.7

Reasoning: Progressive fever, headache, confusion, neck stiffness, and photophobia suggest meningitis; mosquito bites increase suspicion for vector-borne bacterial meningitis....

Differential Diagnoses:

- Viral meningitis (ICD: A87) - 0.2
- Encephalitis (ICD: G04.9) - 0.1
- Malaria (ICD: B54.9) - 0.05

Key Clinical Findings:

- Progressive fever
- Headache
- Confusion
- Neck stiffness

Recommended Tests:

- Lumbar puncture (if possible) - To analyze cerebrospinal fluid for cell count, protein, glucose, Gram stain, and culture to identify the causative organism
- Blood cultures - To identify bacteremia which may suggest the causative agent of meningitis
- Rapid diagnostic test for malaria - To rule out malaria in a febrile patient from a mosquito-endemic area

Immediate Management:

- Initiate empirical antibiotic therapy
- Administer antipyretics for fever

Medications:

- Ceftriaxone 2 g every 12 hours IV
- Dexamethasone 0.15 mg/kg every 6 hours IV

14. grok-2-1212 (USA, Released: 2024-12-12)

Primary Diagnosis: West Nile Virus Encephalitis (ICD-10: A92.3) - Confidence: 0.8

Reasoning: History of mosquito bites, fever, headache, and neurological symptoms suggestive of encephalitis. West Nile Virus is prevalent in rural areas where mosquito exposure is common....

Differential Diagnoses:

- Bacterial Meningitis (ICD: G00.9) - 0.6
- Viral Encephalitis (non-West Nile) (ICD: A86) - 0.5
- Heat Stroke (ICD: T67.5) - 0.3

Key Clinical Findings:

- Neck stiffness
- Photophobia
- Disorientation

Recommended Tests:

- Lumbar Puncture - To rule in/out bacterial meningitis and confirm encephalitis
- Blood Cultures - To identify bacterial infection
- Serology for West Nile Virus - To confirm West Nile Virus infection

Immediate Management:

- Initiate IV fluids for hydration
- Stabilize patient's vital signs

Medications:

- Ceftriaxone 2g IV
- Acetaminophen 1g PO

15. gemma-2-9b-it (USA, Released: 2024-06-27)

Primary Diagnosis: Meningitis (ICD-10: G00) - Confidence: 0.7

Reasoning: Fever, headache, confusion, neck stiffness, and photophobia are highly suggestive of meningitis. The history of recent mosquito bites raises concern for viral meningitis, but bacterial meningitis cann...

Differential Diagnoses:

- Encephalitis (ICD: G04) - 0.2
- Brain Abscess (ICD: I67) - 0.1
- Severe Migraine (ICD: G43) - 0.05

Key Clinical Findings:

- Fever
- Neck stiffness
- Photophobia
- Confusion

Recommended Tests:

- Lumbar puncture - To analyze cerebrospinal fluid for infection, inflammation, and other abnormalities

Immediate Management:

- Administer intravenous fluids
- Initiate empiric antibiotics for suspected bacterial meningitis

Medications:

- Ceftriaxone 2 g IV every 12 hours IV

16. gpt-4o (USA, Released: 2024-05-13)

Primary Diagnosis: Meningitis, likely viral (ICD-10: A87.9) - Confidence: 0.7

Reasoning: The patient's symptoms of fever, headache, neck stiffness, photophobia, and confusion are consistent with meningitis. Recent mosquito bites raise suspicion for viral causes such as West Nile virus....

Differential Diagnoses:

- Bacterial meningitis (ICD: G00.9) - 0.5
- Encephalitis (ICD: G04.90) - 0.4
- Sepsis (ICD: A41.9) - 0.3

Key Clinical Findings:

- Neck stiffness
- Photophobia

Recommended Tests:

- Lumbar puncture - To analyze cerebrospinal fluid for meningitis
- Blood cultures - To identify any bacterial infection
- Complete blood count (CBC) - To assess for infection or systemic inflammation

Immediate Management:

- Initiate empiric IV antibiotics
- Start IV fluids for hydration

Medications:

- Ceftriaxone 2g IV

17. gemini-2.5-flas (USA, Released: 2024-12-19)

Primary Diagnosis: Viral Encephalitis (Arboviral) (ICD-10: A83.9) - Confidence: 0.85

Reasoning: Progressive fever, headache, confusion, neck stiffness, photophobia, and disorientation in a patient with recent mosquito bites strongly suggest arboviral encephalitis, especially given the rural sett...

Differential Diagnoses:

- Bacterial Meningitis (ICD: G00.9) - 0.8
- Cerebral Malaria (ICD: B50.0) - 0.6
- Tick-borne Encephalitis (ICD: A84.9) - 0.5

Key Clinical Findings:

- Progressive fever, headache, confusion (5-day history)
- Recent multiple mosquito bites
- Neck stiffness, photophobia, disorientation on physical exam
- Lack of local advanced diagnostic capabilities (CT, labs)

Recommended Tests:

- Lumbar Puncture (LP) with CSF analysis - To differentiate between bacterial and viral meningitis/encephalitis (cell count, protein, glucose, Gram stain, culture, viral PCR). Essential for diagnosis.
- Blood cultures - To identify systemic bacterial infection or bacteremia that could spread to CNS.
- Complete Blood Count (CBC) with differential - To assess for signs of infection (leukocytosis, leukopenia), anemia, thrombocytopenia.

Immediate Management:

- STAT transfer to tertiary care center for advanced diagnostics (CT, MRI, specialized CSF tests) and definitive management.
- Initiate empiric broad-spectrum antibiotics and antiviral therapy immediately after blood cultures and before LP (if LP is delayed or contraindicated by transfer).
- Secure airway and provide ventilatory support if respiratory compromise or severe altered mental status.

Medications:

- Ceftriaxone 2g IV
- Vancomycin 15mg/kg IV

18. llama-3.2-3b-in (USA, Released: 2024-09-25)

Primary Diagnosis: Dengue Fever (ICD-10: A09.0) - Confidence: 0.8

Reasoning: Symptoms of fever, headache, and confusion, combined with mosquito bites and lack of access to advanced labs, are consistent with dengue fever. The rural setting and limited resources further support ...

Differential Diagnoses:

- Malaria (ICD: P560-P565) - 0.2
- Typhoid Fever (ICD: A01-A09) - 0.1
- Rabies (ICD: A03) - 0.05

Key Clinical Findings:

- Neck stiffness and photophobia
- Disorientation and confusion

Recommended Tests:

- Complete Blood Count (CBC) - To rule in/out anemia and infection
- Urinalysis - To rule in/out urinary tract infection
- Imaging (CT or MRI) of the brain - To rule in/out cerebral edema or hemorrhage

Immediate Management:

- Administer intravenous fluids and antibiotics
- Transport patient to tertiary center

Medications:

- Paracetamol 1g IV q 4h IV
- Ceftriaxone 2.25g IV q 24h IV

19. gpt-4o-mini (USA, Released: 2024-07-18)

Primary Diagnosis: Bacterial Meningitis (ICD-10: G00.9) - Confidence: 0.85

Reasoning: The patient presents with fever, neck stiffness, photophobia, and confusion, which are classic signs of meningitis. The recent mosquito bites raise suspicion for vector-borne infections that could lea...

Differential Diagnoses:

- Viral Meningitis (ICD: A87.9) - 0.1
- Encephalitis (ICD: G05.9) - 0.05
- Malaria (ICD: B50.9) - 0.05

Key Clinical Findings:

- Neck stiffness
- Photophobia

Recommended Tests:

- Lumbar puncture - To analyze cerebrospinal fluid for signs of infection

Immediate Management:

- Initiate intravenous fluids
- Start empirical antibiotic therapy

Medications:

- Ceftriaxone 2 g IV
- Vancomycin 1 g IV

20. qwen-2.5-coder- (China, Released: 2024-11-12)

Primary Diagnosis: Meningitis (ICD-10: G00.0) - Confidence: 0.8

Reasoning: The patient's symptoms of fever, headache, confusion, neck stiffness, and photophobia are classic signs of meningitis. The recent mosquito bites could suggest a possible cause like Japanese encephalit...

Differential Diagnoses:

- Japanese Encephalitis (ICD: A93.0) - 0.7
- Bacterial Meningitis (ICD: G01.0) - 0.6
- Viral Meningitis (ICD: G04.0) - 0.4

Key Clinical Findings:

- Neck stiffness
- Photophobia

Recommended Tests:

- Lumbar Puncture - To obtain cerebrospinal fluid (CSF) for analysis, including cell count, protein level, glucose level, and CSF cultures.
- Complete Blood Count (CBC) - To check for signs of infection or inflammation.
- Electrolytes - To ensure proper hydration and electrolyte balance, especially important in patients with fever and confusion.

Immediate Management:

- Initiate broad-spectrum antibiotics (assuming bacterial meningitis possibility)
- Ensure adequate hydration and electrolyte balance

Medications:

- Ceftriaxone 2g IV
- Acetaminophen 1000mg PO

21. claude-3-opus-2 (USA, Released: 2024-02-29)

Primary Diagnosis: Meningitis, likely bacterial (ICD-10: G00.9) - Confidence: 0.8

Reasoning: Fever, headache, confusion, neck stiffness, and photophobia in the setting of recent mosquito bites suggest meningitis, with bacterial etiology most likely given rapid progression....

Differential Diagnoses:

- Viral meningitis (ICD: A87.9) - 0.4
- Cerebral malaria (ICD: B50.0) - 0.3
- Encephalitis (ICD: G04.90) - 0.2

Key Clinical Findings:

- Fever and headache for 5 days with rapid progression
- Confusion, neck stiffness, and photophobia on exam

Recommended Tests:

- Lumbar puncture - Evaluate for meningitis and distinguish bacterial vs. viral etiology

- Blood cultures - Identify causative organism if bacterial meningitis
- Rapid malaria test - Rule out cerebral malaria given mosquito exposure

Immediate Management:

- Stabilize airway, breathing, circulation
- Empiric broad-spectrum IV antibiotics

Medications:

- Ceftriaxone 2g IV IV
- Vancomycin 15-20mg/kg IV IV

22. Ifm-40b (USA, Released: 2024-10-29)

Primary Diagnosis: Meningitis (ICD-10: Unknown) - Confidence: 0.9

Reasoning: Given the patient's symptoms of fever, headache, confusion, neck stiffness, and photophobia, combined with the recent mosquito bites and remote location suggesting potential exposure to infectious dis...

Differential Diagnoses:

- Encephalitis (ICD: Unknown) - 0.7
- West Nile virus infection (ICD: A92.4) - 0.5
- Community-acquired pneumonia (ICD: J13) - 0.3

Key Clinical Findings:

- Neck stiffness
- Photophobia
- Recent mosquito bites

Recommended Tests:

- Lumbar puncture - To rule in/out meningitis
- Complete blood count (CBC) - To assess for infection
- Blood cultures - To identify potential bacterial pathogens

Immediate Management:

- Administer empiric antibiotics for meningitis
- Start antipyretics and analgesics

Medications:

- Ceftriaxone 2 grams IV every 12 hours IV
- Dexamethasone 0.15 mg/kg IV every 6 hours IV