MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: custom_20250909_084231 Title: Custom Case Generated: 2025-09-09 08:45

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Familial Mediterranean Fever	E85.0	12.1%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
PFAPA Syndrome	D89.1	6.1%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis	Unknown	6.1%	Minority (<10%)
Inflammatory Bowel Disease	K50.9	6.1%	Minority (<10%)
Systemic Lupus Erythematosus	M32.9	6.1%	Minority (<10%)
Reactive Arthritis	M02.9	6.1%	Minority (<10%)
Acute Intermittent Porphyria	Unknown	3.0%	Minority (<10%)
Hereditary Angioedema	Unknown	3.0%	Minority (<10%)
TRAPS	Unknown	3.0%	Minority (<10%)
Mevalonate Kinase Deficiency (hyper-igd Syndrome)	Unknown	3.0%	Minority (<10%)
Adult-Onset Still's Disease	Unknown	3.0%	Minority (<10%)
Systemic Juvenile Idiopathic Arthritis (sjia)	Unknown	3.0%	Minority (<10%)
Vasculitis (e.g., Polyarteritis Nodosa)	Unknown	3.0%	Minority (<10%)
Behçet's Disease	Unknown	3.0%	Minority (<10%)
Undifferentiated Connective Tissue Disease	Unknown	3.0%	Minority (<10%)
Rheumatoid Arthritis	Unknown	3.0%	Minority (<10%)
Juvenile Idiopathic Arthritis	Unknown	3.0%	Minority (<10%)
Scleroderma	Unknown	3.0%	Minority (<10%)
Ankylosing Spondylitis	Unknown	3.0%	Minority (<10%)
Psoriatic Arthritis	Unknown	3.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Inflammatory Bowel Disease with Extra-intestinal Manifestations	K50.9	3.0%	Minority (<10%)
Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (pfapa)	R50.9	3.0%	Minority (<10%)
Hyper-igd Syndrome (hids)	Unknown	3.0%	Minority (<10%)
Cryopyrin-associated Periodic Syndrome (caps)	Unknown	3.0%	Minority (<10%)
Autoinflammatory Syndrome with Dyskeratosis Congenita (aidc)	Unknown	3.0%	Minority (<10%)

Analysis Overview

Models Queried: 7

Successful Responses: 7

Consensus Level: Low

Total Cost: <$0.01

■■ Free Model Disclaimer: This analysis was generated using free AI models

Free models may provide suboptimal results. For improved accuracy and reliability, consider using premium models with an API key.

■■ Note: Analysis using fallback extraction (orchestrator unavailable)

Some advanced analysis features may be limited. ICD codes have been inferred where possible.

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

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

Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	MEFV Genetic Test	→ Confirm FMF, Start Colchicine	→ Proceed to Step 2
2	Extended Genetic Panel	→ Alternative periodic fever	→ Proceed to Step 3
3	Autoimmune Workup	→ Consider SLE/Still's	→ Consider IBD
4	Inflammatory Markers	→ Monitor progression	→ Reassess diagnosis

Executive Summary

Case Description

A 28-year-old male of Mediterranean descent presents with:
- Recurrent episodes of fever lasting 1-3 days
- Severe abdominal pain during episodes
- Chest pain with breathing difficulties
- Joint pain affecting knees and ankles
- Family history: Father and paternal uncle have similar symptoms
- Episodes occur every 2-3 weeks
- Labs during attack: Elevated CRP, ESR, and WBC
- Between attacks: Completely asymptomatic

Patient reports episodes started in childhood around age 7. Recent genetic testing is pending.

Key Clinical Findings

• Severe abdominal pain with peritoneal signs
• Migratory arthritis affecting large joints
• Elevated inflammatory markers (CRP, ESR)
• Recurrent fever episodes
• Positive family history of similar episodes

Primary Recommendations

• Consider Familial Mediterranean Fever among differential diagnoses

Primary Diagnosis Clinical Summaries

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Familial Mediterranean Fever** as the primary diagnosis with 12.1% consensus among 0 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
PFAPA Syndrome	6.1%	0 models	Unlikely
Systemic Juvenile Idiopathic Arthritis	6.1%	0 models	Unlikely
Inflammatory Bowel Disease	6.1%	0 models	Unlikely
Systemic Lupus Erythematosus	6.1%	0 models	Unlikely
Reactive Arthritis	6.1%	0 models	Unlikely
Acute Intermittent Porphyria	3.0%	0 models	Unlikely
Hereditary Angioedema	3.0%	0 models	Unlikely
TRAPS	3.0%	0 models	Unlikely

Minority Opinions

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

- **PFAPA Syndrome** (ICD-10: D89.1) - 6.1% agreement (0 models)
  Supporting Models:
- **Systemic Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 6.1% agreement (0 models)
  Supporting Models:
- **Inflammatory Bowel Disease** (ICD-10: K50.9) - 6.1% agreement (0 models)
  Supporting Models:
- **Systemic Lupus Erythematosus** (ICD-10: M32.9) - 6.1% agreement (0 models)
  Supporting Models:
- **Reactive Arthritis** (ICD-10: M02.9) - 6.1% agreement (0 models)
  Supporting Models:
- **Acute Intermittent Porphyria** (ICD-10: Unknown) - 3.0% agreement (0 models)
  Supporting Models:
- **Hereditary Angioedema** (ICD-10: Unknown) - 3.0% agreement (0 models)
  Supporting Models:
- **TRAPS** (ICD-10: Unknown) - 3.0% agreement (0 models)
  Supporting Models:

• **Mevalonate Kinase Deficiency (hyper-igd Syndrome)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Adult-Onset Still's Disease** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Systemic Juvenile Idiopathic Arthritis (sjia)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Vasculitis (e.g., Polyarteritis Nodosa)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Behçet's Disease** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Undifferentiated Connective Tissue Disease** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Rheumatoid Arthritis** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Juvenile Idiopathic Arthritis** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Scleroderma** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Ankylosing Spondylitis** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Psoriatic Arthritis** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Inflammatory Bowel Disease with Extra-intestinal Manifestations** (ICD-10: K50.9) - 3.0% agreement (0 models)

Supporting Models:

• **Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (pfapa)** (ICD-10: R50.9) - 3.0% agreement (0 models)

Supporting Models:

• **Hyper-igd Syndrome (hids)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Cryopyrin-associated Periodic Syndrome (caps)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

• **Autoinflammatory Syndrome with Dyskeratosis Congenita (aidc)** (ICD-10: Unknown) - 3.0% agreement (0 models)

Supporting Models:

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

No immediate actions identified with high consensus.

Recommended Diagnostic Tests

Treatment Recommendations

Treatment recommendations pending diagnostic confirmation.

Model Diversity & Bias Analysis

Model Response Overview & Cost Analysis

Model	Origin	Tier	Cost	Diagnosis	Training Profile
deepseek-chat-v	China	Unknown	<$0.01	Familial Mediterranean Fever	General
deepseek-r1	China	Unknown	<$0.01	Familial Mediterranean Fever	General
gemma-3-12b-it	USA	Unknown	<$0.01	Periodic Fever Syndrome (likely Familial Mediterranean Fever - FMF)	General
llama-3.2-3b-in	USA	Free	Free	Undifferentiated Connective Tissue Disease	General
mistral-7b-inst	France	Free	Free	Familial Mediterranean Fever	General
gpt-oss-20b	USA	Unknown	<$0.01	Familial Mediterranean Fever	General
shisa-v2-llama3	Japan/USA	Free	Free	Familial Mediterranean Fever	General

Total Estimated Cost: <$0.01

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: Fallback analysis - limited bias assessment available
- Geographic: Cannot assess without orchestrator
- Training Data: Training data bias analysis requires orchestrator

Alternative Diagnoses Bias:

Detailed Model Responses

Complete diagnostic assessments from each model:

1. deepseek-chat-v (China, Released: 2024-12-26)

Primary Diagnosis: Familial Mediterranean Fever (ICD-10: E85.0) - Confidence: 0.9

Differential Diagnoses:

- Periodic Fever Syndrome (other types) (ICD: E85.8) - 0.7
- Systemic Juvenile Idiopathic Arthritis (ICD: M08.2) - 0.5
- Acute Intermittent Porphyria (ICD: E80.21) - 0.4

Key Clinical Findings:

- Mediterranean descent
- Recurrent self-limited febrile episodes
- Abdominal pain
- Chest pain

2. deepseek-r1 (China, Released: 2025-01-20)

3. gemma-3-12b-it (USA, Released: 2024-12-11)

Primary Diagnosis: Periodic Fever Syndrome (likely Familial Mediterranean Fever - FMF) (ICD-10: M15.4) - Confidence: 0.85

Differential Diagnoses:

- Adult-Onset Still's Disease (ICD: M35.3) - 0.6
- Systemic Juvenile Idiopathic Arthritis (sJIA) (ICD: M08.0) - 0.5
- Vasculitis (e.g., Polyarteritis Nodosa) (ICD: M34.0) - 0.4

Key Clinical Findings:

- Recurrent fever episodes (1-3 days)
- Severe abdominal pain during episodes
- Chest pain and breathing difficulties
- Joint pain (knees and ankles)

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

Primary Diagnosis: Undifferentiated Connective Tissue Disease (ICD-10: M32.9) - Confidence: 0.8

Differential Diagnoses:

- Systemic Lupus Erythematosus (ICD: M32.90) - 0.6
- Rheumatoid Arthritis (ICD: M05.9) - 0.4
- Juvenile Idiopathic Arthritis (ICD: M05.89) - 0.3

Key Clinical Findings:

- Recurrent episodes of fever
- Severe abdominal pain
- Chest pain with breathing difficulties
- Joint pain affecting knees and ankles

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

6. gpt-oss-20b (USA, Released: 2024-05-13)

7. shisa-v2-llama3 (Japan/USA, Released: 2024-12-20)

Primary Diagnosis: Familial Mediterranean Fever (FMF) (ICD-10: E85.0) - Confidence: 0.85

Differential Diagnoses:

- Periodic Fever, Aphthous Stomatitis, Pharyngitis, Adenitis (PFAPA) (ICD: E85.8) - 0.1
- Hyper-IgD Syndrome (HIDS) (ICD: E85.1) - 0.05
- Cryopyrin-Associated Periodic Syndrome (CAPS) (ICD: E85.2) - 0.05

Key Clinical Findings:

- Recurrent febrile episodes with abdominal, chest, and joint pain
- Family history of similar symptoms in father and paternal uncle
- Elevated inflammatory markers (CRP, ESR, WBC) during attacks
- Asymptomatic between attacks