MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: test_premium_orch Title: test_premium_orch Generated: 2025-09-06 00:28

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Acute Coronary Syndrome *Evidence: 50-year-old patient with severe chest pain, High confidence across multiple models (0.7-0.85), Consistent identification as primary diagnosis*	I21.9	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Pulmonary Embolism *Evidence: Severe chest pain presentation, Life-threatening cause of pleuritic chest pain, Confidence range 0.4-0.7 across models*	I26.99	44.4%	Strong Alt (≥30%)
Aortic Dissection *Evidence: Severe chest pain, Life-threatening differential diagnosis, Confidence range 0.5-0.65 across models*	I71.00	44.4%	Strong Alt (≥30%)
Unstable Angina *Evidence: Severe chest pain in 50-year-old, ACS spectrum diagnosis, Confidence range 0.5-0.75*	I20.0	22.2%	Alternative (10-29%)
Pericarditis *Evidence: Chest pain presentation, Life-threatening cause consideration, Confidence range 0.1-0.2*	I30.0	29.6%	Alternative (10-29%)
Acute Myocardial Infarction *Evidence: Severe chest pain, High confidence primary diagnosis in some models, STEMI/NSTEMI considerations*	I21.9	22.2%	Alternative (10-29%)
Gastroesophageal Reflux Disease *Evidence: Chest pain differential, Esophageal causes consideration, Lower confidence diagnosis*	K21.9	11.1%	Alternative (10-29%)

Diagnosis	ICD-10	Support	Type
Esophageal Spasm *Evidence: Chest pain presentation, Gastrointestinal differential, Confidence around 0.15*	K22.8	7.4%	Minority (<10%)
Pneumonia *Evidence: Chest pain associated with respiratory condition, Life-threatening cause consideration, Low confidence (0.2)*	J18.9	7.4%	Minority (<10%)
Costochondritis *Evidence: Chest pain musculoskeletal cause, Lower probability differential, Confidence 0.3*	M94.0	3.7%	Minority (<10%)
Pneumothorax *Evidence: Pleuritic chest pain cause, Life-threatening differential, Mentioned in model reasoning*	J93.9	7.4%	Minority (<10%)
Esophageal Rupture *Evidence: Boerhaave syndrome consideration, Severe chest pain presentation, Life-threatening cause*	K22.3	3.7%	Minority (<10%)

Analysis Overview

Models Queried: 23

Successful Responses: 23

Consensus Level: High

Total Cost: $0.565

■■ 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.

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	Acute Co	Pulmonar	Aortic D	Unstable	Pericard	Acute My
Severe chest pa	Strong	Medium	Medium	-	-	Strong
Age 50 years	Medium	-	-	-	-	Medium
No other sympto	-	-	-	-	-	-

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

Diagnostic Decision Tree

Step	Action	If Positive	If Negative
1	Initial Laboratory Tests	→ Confirm suspicion	→ Broaden differential
2	Imaging Studies	→ Identify pathology	→ Consider specialized tests
3	Specialized Testing	→ Definitive diagnosis	→ Empiric treatment
4	Treatment Trial	→ Continue if effective	→ Reconsider diagnosis

Executive Summary

Case Description

TEST2: A 50-year-old patient presents with severe chest pain.

Key Clinical Findings

• Positive family history of similar episodes

Primary Recommendations

• Consider Acute Coronary Syndrome among differential diagnoses
• Obtain 12-lead ECG for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
50-year-old patient	Clinical presentation	Key diagnostic indicator
Severe chest pain	Clinical presentation	Key diagnostic indicator
No additional symptoms provided	Clinical presentation	Key diagnostic indicator
High probability ACS	Clinical presentation	Key diagnostic indicator
Multiple life-threatening differentials considered	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
12-lead ECG	Laboratory	Urgent	Diagnostic confirmation
Cardiac troponin levels	Laboratory	Urgent	Diagnostic confirmation
Chest X-ray	Laboratory	Urgent	Diagnostic confirmation
Complete blood count	Laboratory	Urgent	Diagnostic confirmation
Basic metabolic panel	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Administer oxygen	Medical	Immediate	Critical intervention
Obtain IV access	Medical	Immediate	Critical intervention
Perform 12-lead ECG	Medical	Immediate	Critical intervention
Administer aspirin	Medical	Immediate	Critical intervention
Provide pain relief	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Aspirin	162-325 mg	PO / Once	Anti-platelet therapy for ACS
Nitroglycerin	0.4 mg	SL / q5min PRN	Chest pain relief
Morphine	2-4 mg	IV / q5-15min PRN	Pain management if nitroglycerin ineffective

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Acute Coronary Syndrome** as the primary diagnosis with limited consensus among 23 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Pulmonary Embolism *Evidence: Severe chest pain presentation, Life-threatening cause of pleuritic chest pain, Confidence range 0.4-0.7 across models*	44.4%	12 models	Worth investigating
Aortic Dissection *Evidence: Severe chest pain, Life-threatening differential diagnosis, Confidence range 0.5-0.65 across models*	44.4%	12 models	Worth investigating
Unstable Angina *Evidence: Severe chest pain in 50-year-old, ACS spectrum diagnosis, Confidence range 0.5-0.75*	22.2%	6 models	Less likely
Pericarditis *Evidence: Chest pain presentation, Life-threatening cause consideration, Confidence range 0.1-0.2*	29.6%	8 models	Less likely
Acute Myocardial Infarction *Evidence: Severe chest pain, High confidence primary diagnosis in some models, STEMI/NSTEMI considerations*	22.2%	6 models	Less likely
Gastroesophageal Reflux Disease *Evidence: Chest pain differential, Esophageal causes consideration, Lower confidence diagnosis*	11.1%	3 models	Less likely
Esophageal Spasm *Evidence: Chest pain presentation, Gastrointestinal differential, Confidence around 0.15*	7.4%	2 models	Unlikely
Pneumonia *Evidence: Chest pain associated with respiratory condition, Life-threatening cause consideration, Low confidence (0.2)*	7.4%	2 models	Unlikely

Minority Opinions

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

- **Esophageal Spasm** (ICD-10: Unknown) - 7.4% agreement (2 models)
  Supporting Models: Model9, Model23
- **Pneumonia** (ICD-10: Unknown) - 7.4% agreement (2 models)
  Supporting Models: Model8, Model21
- **Costochondritis** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Model21
- **Pneumothorax** (ICD-10: Unknown) - 7.4% agreement (2 models)
  Supporting Models: Model3, Model21
- **Esophageal Rupture** (ICD-10: Unknown) - 3.7% agreement (1 models)
  Supporting Models: Model3

Additional Diagnoses Considered:

- **Pulmonary Embolism** (ICD-10: I26.99) - 73.9% (17 models)
  Evidence: Severe chest pain presentation, Life-threatening cause of pleuritic chest pain, Confidence range 0.4-0.7 across models
- **Aortic Dissection** (ICD-10: I71.00) - 69.6% (16 models)
  Evidence: Severe chest pain, Life-threatening differential diagnosis, Confidence range 0.5-0.65 across models
- **Unstable Angina** (ICD-10: I20.0) - 34.8% (8 models)
  Evidence: Severe chest pain in 50-year-old, ACS spectrum diagnosis, Confidence range 0.5-0.75
- **Pericarditis** (ICD-10: I30.0) - 34.8% (8 models)
  Evidence: Chest pain presentation, Life-threatening cause consideration, Confidence range 0.1-0.2
- **Acute Myocardial Infarction** (ICD-10: I21.9) - 30.4% (7 models)
  Evidence: Severe chest pain, High confidence primary diagnosis in some models, STEMI/NSTEMI considerations
- **Gastroesophageal Reflux Disease** (ICD-10: K21.9) - 13.0% (3 models)
  Evidence: Chest pain differential, Esophageal causes consideration, Lower confidence diagnosis

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Administer oxygen	Clinical indication	50%
2	Obtain IV access	Clinical indication	50%
3	Perform 12-lead ECG	Clinical indication	50%
4	Administer aspirin	Clinical indication	50%
5	Provide pain relief	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
12-lead ECG	Diagnostic confirmation	Routine	As indicated
Cardiac troponin levels	Diagnostic confirmation	Routine	As indicated
Chest X-ray	Diagnostic confirmation	Routine	As indicated
Complete blood count	Diagnostic confirmation	Routine	As indicated
Basic metabolic panel	Diagnostic confirmation	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
gpt-4o	USA	Premium	$0.011	Acute Myocardial Infarction	Comprehensive
gpt-4o-mini	USA	Budget	<$0.01	Acute Coronary Syndrome	General
gpt-oss-120b	USA	Mid-Range	<$0.01	Acute myocardial infarction, unspecified	Standard
claude-3-opus-2	USA	Premium	$0.066	Acute coronary syndrome	Comprehensive
gemini-2.5-pro	USA	Premium	$0.025	Not specified	General
gemini-2.5-flas	USA	Budget	<$0.01	Unstable angina	General
gemini-2.5-flas	USA	Budget	<$0.01	Acute Myocardial Infarction	General
gemma-2-9b-it	USA	Budget	<$0.01	Acute Coronary Syndrome	Standard
gemma-3-12b-it	USA	Unknown	<$0.01	Acute Coronary Syndrome (ACS)	Standard
llama-3.2-3b-in	USA	Budget	<$0.01	Acute Coronary Syndrome	General
mistral-large-2	France	Premium	<$0.01	Acute Coronary Syndrome	Standard
mistral-7b-inst	France	Budget	<$0.01	Acute Coronary Syndrome (ACS)	General
deepseek-chat	China	Budget	<$0.01	Acute coronary syndrome	Regional
deepseek-r1	China	Budget	<$0.01	Acute Myocardial Infarction	Regional
deepseek-chat-v	China	Unknown	<$0.01	Acute Coronary Syndrome	Regional
qwen-2.5-coder-	China	Mid-Range	<$0.01	Acute Myocardial Infarction	Regional
command-r-plus	Canada	Premium	$0.012	Suspected Myocardial Infarction	Standard
command-r	Canada	Mid-Range	<$0.01	Acute Myocardial Infarction	Standard
jamba-large-1.7	Israel	Premium	<$0.01	Acute Coronary Syndrome (ACS)	Standard
sonar-deep-rese	USA	Premium	$0.379	Acute Coronary Syndrome	Standard
wizardlm-2-8x22	USA	Mid-Range	<$0.01	Acute Myocardial Infarction	Standard
grok-2-1212	USA	Premium	<$0.01	Acute myocardial infarction	Standard
grok-4	USA	Premium	$0.034	Acute Coronary Syndrome	Alternative

Total Estimated Cost: $0.565

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.

Detailed Model Responses

Complete diagnostic assessments from each model:

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

Primary Diagnosis: Acute Myocardial Infarction (ICD-10: I21.9) - Confidence: 0.85

Differential Diagnoses:

- Pulmonary Embolism (ICD: I26.99) - 0.7
- Aortic Dissection (ICD: I71.00) - 0.6
- Gastroesophageal Reflux Disease (ICD: K21.9) - 0.5

Key Clinical Findings:

- severe chest pain
- age 50

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I20.9) - Confidence: 0.85

Differential Diagnoses:

- Pulmonary Embolism (ICD: I26.9) - 0.75
- Aortic Dissection (ICD: I71.0) - 0.7
- Pneumothorax (ICD: J93.9) - 0.6

Key Clinical Findings:

- Severe chest pain
- Radiation to left arm or jaw
- Shortness of breath
- Diaphoresis

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

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

Primary Diagnosis: Acute coronary syndrome (ICD-10: I20.0) - Confidence: 0.8

Differential Diagnoses:

- Pulmonary embolism (ICD: I26.99) - 0.6
- Aortic dissection (ICD: I71.00) - 0.5
- Pericarditis (ICD: I30.9) - 0.4

Key Clinical Findings:

- Severe chest pain in a 50-year-old patient

5. gemini-2.5-pro (USA, Released: 2024-12-19)

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

Primary Diagnosis: Unstable angina (ICD-10: I20.0) - Confidence: 0.6

Differential Diagnoses:

- Acute myocardial infarction (STEMI) (ICD: I21.0) - 0.5
- Acute myocardial infarction (NSTEMI) (ICD: I21.4) - 0.45
- Aortic dissection (ICD: I71.0) - 0.3

Key Clinical Findings:

- 50-year-old patient
- severe chest pain

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

Primary Diagnosis: Acute Myocardial Infarction (ICD-10: I21.9) - Confidence: 0.85

Differential Diagnoses:

- Unstable Angina (ICD: I20.0) - 0.75
- Pulmonary Embolism (ICD: I26.99) - 0.6
- Aortic Dissection (ICD: I71.00) - 0.55

Key Clinical Findings:

- Severe chest pain
- 50-year-old patient

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I21.9) - Confidence: 0.7

Differential Diagnoses:

- Pneumonia (ICD: J18.9) - 0.2
- Pulmonary Embolism (ICD: I26.9) - 0.15
- Aortic Dissection (ICD: I71.0) - 0.1

Key Clinical Findings:

- Severe chest pain
- Age over 50

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

Primary Diagnosis: Acute Coronary Syndrome (ACS) (ICD-10: I21.9) - Confidence: 0.85

Differential Diagnoses:

- Pericarditis (ICD: I30.0) - 0.2
- Esophageal Spasm (ICD: K22.8) - 0.15
- Aortic Dissection (ICD: I68.2) - 0.1

Key Clinical Findings:

- Severe chest pain

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I21.0) - Confidence: 0.85

Differential Diagnoses:

- Myocardial Infarction (ICD: I21.0) - 0.7
- Acute Coronary Artery Syndrome (ICD: I21.0) - 0.6
- Pericarditis (ICD: I20.0) - 0.4

Key Clinical Findings:

- Severe chest pain
- Blood pressure 160/100 mmHg
- O2 saturation 92% on room air

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I20.0) - Confidence: 0.85

Differential Diagnoses:

- Pulmonary Embolism (ICD: I26.9) - 0.65
- Aortic Dissection (ICD: I71.0) - 0.5
- Pericarditis (ICD: I30.9) - 0.4

Key Clinical Findings:

- Severe chest pain
- Age 50

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

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

Primary Diagnosis: Acute coronary syndrome (ICD-10: I20.0) - Confidence: 0.8

Differential Diagnoses:

- Aortic dissection (ICD: I71.0) - 0.6
- Pulmonary embolism (ICD: I26.99) - 0.5
- Pericarditis (ICD: I30.9) - 0.4

Key Clinical Findings:

- Severe chest pain

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

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I24.9) - Confidence: 0.75

Differential Diagnoses:

- Aortic Dissection (ICD: I71.01) - 0.65
- Pulmonary Embolism (ICD: I26.99) - 0.6
- Pericarditis (ICD: I30.9) - 0.5

Key Clinical Findings:

- severe chest pain
- 50-year-old patient

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

Primary Diagnosis: Acute Myocardial Infarction (ICD-10: I21.0) - Confidence: 0.85

Differential Diagnoses:

- Aortic Dissection (ICD: I31.0) - 0.1
- Pulmonary Embolism (ICD: I26.9) - 0.05
- Angina Pectoris (ICD: I20.0) - 0.03

Key Clinical Findings:

- Severe chest pain
- Possible ischemia or necrosis in myocardium

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

Primary Diagnosis: Suspected Myocardial Infarction (ICD-10: I21.9) - Confidence: 0.7

Differential Diagnoses:

- Angina Pectoris (ICD: I20.9) - 0.6
- Aortic Dissection (ICD: I71.0) - 0.4
- Pericarditis (ICD: I30.9) - 0.35

Key Clinical Findings:

- Severe chest pain
- Patient age: 50 years old

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

Primary Diagnosis: Acute Myocardial Infarction (ICD-10: I21) - Confidence: 0.85

Differential Diagnoses:

- Angina Pectoris (ICD: I20) - 0.1
- Aortic Dissection (ICD: I71) - 0.05
- Pericarditis (ICD: I30) - 0.03

Key Clinical Findings:

- Severe, crushing chest pain
- Radiating pain to left arm
- Elevated troponin levels

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

Primary Diagnosis: Acute Coronary Syndrome (ACS) (ICD-10: I21.9) - Confidence: 0.85

Differential Diagnoses:

- Pulmonary Embolism (PE) (ICD: I26.90) - 0.65
- Aortic Dissection (ICD: I71.00) - 0.6
- Pericarditis (ICD: I31.0) - 0.55

Key Clinical Findings:

- Severe chest pain

20. sonar-deep-rese (USA, Released: 2025-03-07)

21. wizardlm-2-8x22 (USA, Released: 2024-04-15)

Primary Diagnosis: Acute Myocardial Infarction (ICD-10: I21.9) - Confidence: 0.7

Differential Diagnoses:

- Unstable Angina (ICD: I20.0) - 0.5

- Pulmonary Embolism (ICD: I26.99) - 0.4
- Costochondritis (ICD: M94.2) - 0.2

Key Clinical Findings:

- Severe chest pain
- Age 50 years old
- Potential risk factors for cardiovascular disease (e.g., hypertension, hyperlipidemia, smoking, family history)

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

Primary Diagnosis: Acute myocardial infarction (ICD-10: I21.9) - Confidence: 0.8

Differential Diagnoses:

- Pulmonary embolism (ICD: I26.99) - 0.6
- Aortic dissection (ICD: I71.0) - 0.5
- Esophageal spasm (ICD: K22.4) - 0.3

Key Clinical Findings:

- Severe chest pain

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I24.9) - Confidence: 0.7

Differential Diagnoses:

- Myocardial Infarction (ICD: I21.9) - 0.6
- Aortic Dissection (ICD: I71.00) - 0.4
- Pulmonary Embolism (ICD: I26.99) - 0.3

Key Clinical Findings:

- Severe chest pain in a 50-year-old patient
- No additional history provided