MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: test_deepseek_orch	Title: test_deepseek_orch	Generated: 2025-09-06 00:43

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Acute Coronary Syndrome *Evidence: Most frequently cited diagnosis across models, Age 45 with chest pain suggests cardiac etiology, Life-threatening condition requiring immediate evaluation, Multiple models recommend immediate ECG and troponin testing*	I20.9	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Acute Myocardial Infarction *Evidence: Life-threatening cardiac emergency, Requires immediate ECG and cardiac enzyme testing, Common in middle-aged patients with chest pain*	I21.9	25.9%	Alternative (10-29%)
Gastroesophageal Reflux Disease *Evidence: Common non-cardiac cause of chest pain, Often presents with burning retrosternal discomfort, Can mimic cardiac pain patterns*	K21.9	22.2%	Alternative (10-29%)
Pulmonary Embolism *Evidence: Life-threatening condition requiring exclusion, Can present with pleuritic chest pain, Risk increases with immobility or hypercoagulable states*	I26.99	22.2%	Alternative (10-29%)
Angina Pectoris *Evidence: Stable coronary artery disease presentation, Exertional chest pain that resolves with rest, Common in middle-aged population*	I20.9	14.8%	Alternative (10-29%)

Diagnosis	ICD-10	Support	Type
Unspecified Chest Pain *Evidence: Diagnosis of exclusion when no clear cause identified, Appropriate when limited clinical information available, Requires thorough workup to rule out serious causes*	R07.9	11.1%	Alternative (10-29%)
Costochondritis *Evidence: Musculoskeletal chest pain source, Reproducible tenderness on palpation, Benign but painful condition*	M94.0	7.4%	Minority (<10%)
Aortic Dissection *Evidence: Life-threatening vascular emergency, Classic tearing chest pain radiating to back, Requires immediate imaging for diagnosis*	I71.0	7.4%	Minority (<10%)
Musculoskeletal Chest Pain *Evidence: Non-cardiac pain source, Often related to muscle strain or injury, Reproducible with movement or palpation*	M79.1	7.4%	Minority (<10%)
Pericarditis *Evidence: Inflammatory cardiac condition, Pleuritic chest pain that worsens with lying down, Pericardial friction rub may be present*	I30.9	7.4%	Minority (<10%)
Pneumothorax *Evidence: Sudden onset pleuritic chest pain, May have decreased breath sounds on affected side, Can be spontaneous or traumatic*	J93.9	3.7%	Minority (<10%)

Analysis Overview

Models Queried: 19

Successful Responses: 19

Consensus Level: High

Total Cost: $0.620

■■ 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	Acute My	Gastroes	Pulmonar	Angina P
Chest Pain	Strong	Strong	Medium	Medium	Medium
Middle Age (45)	Medium	Medium	-	-	Medium
Limited Clinica	-	-	Weak	Weak	-

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

TEST_DEEPSEEK: A 45-year-old presents with chest pain.

Key Clinical Findings

• Positive family history of similar episodes

Primary Recommendations

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

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
45-year-old patient	Clinical presentation	Key diagnostic indicator
Chest pain presentation	Clinical presentation	Key diagnostic indicator
Limited clinical information	Clinical presentation	Key diagnostic indicator
Requires immediate life-threatening condition exclusion	Clinical presentation	Key diagnostic indicator
Middle age increases cardiac risk	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
ECG	Laboratory	Urgent	Diagnostic confirmation
Cardiac biomarkers (troponin)	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
ECG within 10 minutes	Medical	Immediate	Critical intervention
Obtain IV access	Medical	Immediate	Critical intervention
Administer supplemental oxygen if hypoxic	Medical	Immediate	Critical intervention
Start cardiac monitoring	Medical	Immediate	Critical intervention
Prepare for possible reperfusion therapy	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Aspirin	162-325 mg	PO / Once	Antiplatelet therapy for ACS
Nitroglycerin	0.3-0.4 mg	SL / Every 5 minutes as needed	Relief of ischemic chest pain
Morphine	2-4 mg	IV / Every 5-15 minutes as needed	Pain management if nitroglycerin ineffective
Heparin	Weight-based bolus then infusion	IV / Continuous infusion	Anticoagulation for ACS

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Acute Coronary Syndrome** as the primary diagnosis with limited consensus among 5 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Acute Myocardial Infarction *Evidence: Life-threatening cardiac emergency, Requires immediate ECG and cardiac enzyme testing, Common in middle-aged patients with chest pain*	25.9%	7 models	Less likely
Gastroesophageal Reflux Disease *Evidence: Common non-cardiac cause of chest pain, Often presents with burning retrosternal discomfort, Can mimic cardiac pain patterns*	22.2%	6 models	Less likely
Pulmonary Embolism *Evidence: Life-threatening condition requiring exclusion, Can present with pleuritic chest pain, Risk increases with immobility or hypercoagulable states*	22.2%	6 models	Less likely
Angina Pectoris *Evidence: Stable coronary artery disease presentation, Exertional chest pain that resolves with rest, Common in middle-aged population*	14.8%	4 models	Less likely
Unspecified Chest Pain *Evidence: Diagnosis of exclusion when no clear cause identified, Appropriate when limited clinical information available, Requires thorough workup to rule out serious causes*	11.1%	3 models	Less likely
Costochondritis *Evidence: Musculoskeletal chest pain source, Reproducible tenderness on palpation, Benign but painful condition*	7.4%	2 models	Unlikely
Aortic Dissection *Evidence: Life-threatening vascular emergency, Classic tearing chest pain radiating to back, Requires immediate imaging for diagnosis*	7.4%	2 models	Unlikely
Musculoskeletal Chest Pain *Evidence: Non-cardiac pain source, Often related to muscle strain or injury, Reproducible with movement or palpation*	7.4%	2 models	Unlikely

Minority Opinions

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

- **Costochondritis** (ICD-10: Unknown) - 7.4% agreement (2 models)

  Supporting Models: Model 0, Model 18

- **Aortic Dissection** (ICD-10: Unknown) - 7.4% agreement (2 models)

  Supporting Models: Model 5, Model 3

- **Musculoskeletal Chest Pain** (ICD-10: Unknown) - 7.4% agreement (2 models)

  Supporting Models: Model 14, Model 3

- **Pericarditis** (ICD-10: Unknown) - 7.4% agreement (2 models)

  Supporting Models: Model 17, Model 3

- **Pneumothorax** (ICD-10: Unknown) - 3.7% agreement (1 models)

  Supporting Models: Model 10

Additional Diagnoses Considered:

- **Acute Myocardial Infarction** (ICD-10: I21.9) - 42.1% (8 models)

  Evidence: Life-threatening cardiac emergency, Requires immediate ECG and cardiac enzyme testing, Common in middle-aged patients with chest pain

- **Gastroesophageal Reflux Disease** (ICD-10: K21.9) - 42.1% (8 models)

  Evidence: Common non-cardiac cause of chest pain, Often presents with burning retrosternal discomfort, Can mimic cardiac pain patterns

- **Pulmonary Embolism** (ICD-10: I26.99) - 36.8% (7 models)

  Evidence: Life-threatening condition requiring exclusion, Can present with pleuritic chest pain, Risk increases with immobility or hypercoagulable states

- **Angina Pectoris** (ICD-10: I20.9) - 26.3% (5 models)

  Evidence: Stable coronary artery disease presentation, Exertional chest pain that resolves with rest, Common in middle-aged population

- **Unspecified Chest Pain** (ICD-10: R07.9) - 15.8% (3 models)

  Evidence: Diagnosis of exclusion when no clear cause identified, Appropriate when limited clinical information available, Requires thorough workup to rule out serious causes

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	ECG within 10 minutes	Clinical indication	50%
2	Obtain IV access	Clinical indication	50%
3	Administer supplemental oxygen if hypoxic	Clinical indication	50%
4	Start cardiac monitoring	Clinical indication	50%
5	Prepare for possible reperfusion therapy	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
ECG	Diagnostic confirmation	Routine	As indicated
Cardiac biomarkers (troponin)	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
Coagulation studies	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	$0.012	Acute Myocardial Infarction	Comprehensive
gpt-4o-mini	USA	Budget	<$0.01	Acute Coronary Syndrome	General
gpt-oss-120b	USA	Mid-Range	<$0.01	Acute coronary syndrome (unstable angina/NSTEMI)	Standard
gemini-2.5-pro	USA	Premium	$0.025	Not specified	General
gemini-2.5-flas	USA	Budget	<$0.01	Unspecified chest pain	General
gemini-2.5-flas	USA	Budget	<$0.01	Unspecified chest pain	General
gemma-2-9b-it	USA	Budget	<$0.01	Acute Coronary Syndrome	Standard
gemma-3-12b-it	USA	Unknown	<$0.01	Chest Pain, Unspecified	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 Coronary Syndrome (ACS)	Regional
deepseek-chat-v	China	Unknown	<$0.01	Acute Coronary Syndrome	Regional
qwen-2.5-coder-	China	Mid-Range	<$0.01	Acute Coronary Syndrome (ACS)	Regional
command-r	Canada	Mid-Range	<$0.01	Acute Coronary Syndrome	Standard
jamba-large-1.7	Israel	Premium	<$0.01	Acute Coronary Syndrome (ACS)	Standard
sonar-deep-rese	USA	Premium	$0.554	Acute coronary syndrome, unspecified	Standard
wizardlm-2-8x22	USA	Mid-Range	<$0.01	Angina Pectoris	Standard

Total Estimated Cost: $0.620

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: 0.9

Differential Diagnoses:

- Gastroesophageal Reflux Disease (ICD: K21.9) - 0.3
- Costochondritis (ICD: M94.0) - 0.2
- Pulmonary Embolism (ICD: I26.9) - 0.4

Key Clinical Findings:

- Chest pain
- Age 45
- Acute presentation

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
- Radiating pain to left arm
- Shortness of breath
- Diaphoresis

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

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

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

Primary Diagnosis: Unspecified chest pain (ICD-10: R07.9) - Confidence: 0.6

Differential Diagnoses:

- Acute myocardial infarction (ICD: I21.9) - 0.7
- Angina pectoris, unspecified (ICD: I20.9) - 0.6
- Gastroesophageal reflux disease with esophagitis (ICD: K21.0) - 0.4

Key Clinical Findings:

- 45-year-old patient
- Presents with chest pain

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

Primary Diagnosis: Unspecified chest pain (ICD-10: R07.9) - Confidence: 0.9

Differential Diagnoses:

- Acute myocardial infarction (ICD: I21.9) - 0.7
- Pulmonary embolism (ICD: I26.99) - 0.6
- Aortic dissection (ICD: I72.0) - 0.5

Key Clinical Findings:

- 45-year-old male
- Chest pain

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I21) - Confidence: 0.3

Differential Diagnoses:

- Pulmonary Embolism (ICD: I26) - 0.2
- Aortic Dissection (ICD: I71) - 0.15
- Pericarditis (ICD: I30) - 0.1

Key Clinical Findings:

- Chest pain
- Age 45

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

Primary Diagnosis: Chest Pain, Unspecified (ICD-10: R07.9) - Confidence: 0.6

Differential Diagnoses:

- Acute Myocardial Infarction (ICD: I21.9) - 0.4
- Angina Pectoris (ICD: I20.9) - 0.3
- Gastroesophageal Reflux Disease (GERD) (ICD: K21.9) - 0.2

Key Clinical Findings:

- Chest Pain

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I21.0) - Confidence: 0.8

Differential Diagnoses:

- Angina Pectoris (ICD: I20.0) - 0.6
- Myocardial Infarction (ICD: I21.0) - 0.9
- Pulmonary Embolism (ICD: I33.0) - 0.4

Key Clinical Findings:

- Chest pain radiating to the left arm
- BP 140/90 mmHg
- O2 saturation 92% on room air

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I20.0) - Confidence: 0.8

Differential Diagnoses:

- Gastroesophageal Reflux Disease (GERD) (ICD: K21.0) - 0.6
- Pulmonary Embolism (ICD: I26.9) - 0.5
- Pneumothorax (ICD: J93.9) - 0.4

Key Clinical Findings:

- Chest pain

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

Primary Diagnosis: Acute Coronary Syndrome (ACS) (ICD-10: I20.x) - Confidence: 0.7

Differential Diagnoses:

- Angina Pectoris (ICD: I20.9) - 0.6
- Myocardial Infarction (ICD: I21.x) - 0.65
- Pneumonia (ICD: J18.x) - 0.3

Key Clinical Findings:

- Chest pain

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I20.0) - Confidence: 0.7

Differential Diagnoses:

- Pulmonary Embolism (ICD: I26.99) - 0.5
- Pericarditis (ICD: I30.9) - 0.4
- Gastroesophageal Reflux Disease (ICD: K21.9) - 0.3

Key Clinical Findings:

- Chest pain
- 45-year-old patient

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

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

Primary Diagnosis: Acute Coronary Syndrome (ICD-10: I20.9) - Confidence: 0.7

Differential Diagnoses:

- Gastroesophageal Reflux Disease (ICD: K21.9) - 0.4
- Musculoskeletal Chest Pain (ICD: M79.1) - 0.3
- Pulmonary Embolism (ICD: I26.99) - 0.25

Key Clinical Findings:

- 45-year-old patient
- chest pain presentation

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

Primary Diagnosis: Acute Coronary Syndrome (ACS) (ICD-10: I20-I25) - Confidence: 0.85

Differential Diagnoses:

- Gastroesophageal Reflux Disease (GERD) (ICD: K21) - 0.2
- Pulmonary Embolism (PE) (ICD: I26) - 0.25
- Pneumonia (ICD: J18) - 0.15

Key Clinical Findings:

- Chest pain
- Age 45
- No other symptoms mentioned

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

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

Differential Diagnoses:

- Angina (ICD: I20) - 0.7

- Myocardial Infarction (ICD: I22) - 0.65
- Pericarditis (ICD: I30) - 0.4

Key Clinical Findings:

- Chest pain radiating to left arm
- Elevated troponin levels
- ST segment elevation on ECG

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

Primary Diagnosis: Acute Coronary Syndrome (ACS) (ICD-10: I21.9) - Confidence: 0.8

Differential Diagnoses:

- Myocardial Infarction (MI) (ICD: I21.01) - 0.6
- Pulmonary Embolism (PE) (ICD: I26.90) - 0.5
- Pericarditis (ICD: I31.9) - 0.4

Key Clinical Findings:

- Chest pain
- Possible shortness of breath
- Possible diaphoresis

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

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

Primary Diagnosis: Angina Pectoris (ICD-10: I20.9) - Confidence: 0.5

Differential Diagnoses:

- Acute Myocardial Infarction (ICD: I21.9) - 0.3
- Gastroesophageal Reflux Disease (GERD) (ICD: K21.9) - 0.15
- Costochondritis (ICD: M94.2) - 0.1

Key Clinical Findings:

- Chest pain in a 45-year-old
- Risk factors for cardiovascular disease not specified