MEDLEY

Medical AI Ensemble Clinical Decision Report

Case ID: tmpqxoi3p9n Title: Custom Case Analysis Generated: 2025-09-07 17:26

Primary Diagnostic Consensus

Diagnosis	ICD-10	Agreement	Confidence	Status
Diabetic Nephropathy *Evidence: High confidence diagnosis from both models, ICD code E11.22/E11.2 specified, Consistent with chronic kidney disease presentation*	E11.22	0.0%	Very Low	PRIMARY

Alternative & Minority Diagnoses

Diagnosis	ICD-10	Support	Type
Hypertensive Nephrosclerosis *Evidence: High confidence differential diagnosis, ICD code I12.9 specified in both models*	I12.9	7.4%	Minority (<10%)
Chronic Glomerulonephritis *Evidence: Moderate confidence differential diagnosis, ICD code N03.9 specified*	N03.9	3.7%	Minority (<10%)
Ischemic Nephropathy *Evidence: Included in differential diagnosis list, Vascular etiology considered*	I70.9	3.7%	Minority (<10%)
Chronic Kidney Disease Stage IV *Evidence: Primary diagnosis in second model, Stage specification indicates severity*	N18.4	3.7%	Minority (<10%)
Diabetic Nephropathy as primary contributor *Evidence: Listed as differential despite being primary, Different ICD coding approach*	E11.2	3.7%	Minority (<10%)
Hypertensive Nephropathy as secondary contributor *Evidence: Secondary contributor designation, High confidence rating*	I12.9	3.7%	Minority (<10%)
Membranous Nephropathy *Evidence: Common differential for proteinuric kidney disease*	N05.3	0.0%	Minority (<10%)

Diagnosis	ICD-10	Support	Type
Focal Segmental Glomerulosclerosis *Evidence: Considered in diabetic patients with nephrotic syndrome*	N05.1	0.0%	Minority (<10%)
Renal Artery Stenosis *Evidence: Vascular cause of chronic kidney disease*	I70.1	0.0%	Minority (<10%)
Analgesic Nephropathy *Evidence: Considered in patients with chronic pain medication use*	N14.0	0.0%	Minority (<10%)
Lupus Nephritis *Evidence: Autoimmune cause of glomerular disease*	M32.14	0.0%	Minority (<10%)
Amyloidosis *Evidence: Systemic disease causing proteinuric kidney disease*	E85.9	0.0%	Minority (<10%)

Analysis Overview

Models Queried: 2

Successful Responses: 2

Consensus Level: High

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.

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	Diabetic	Hyperten	Chronic	Ischemic	Chronic
Proteinuria	Strong	-	Medium	-	-
Elevated creati	-	-	-	Medium	Strong
Hypertension	Medium	Strong	-	-	-
Diabetes histor	Strong	-	-	-	-
Reduced GFR	-	-	-	-	Strong

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

A 64-year-old woman with a history of poorly controlled type 2 diabetes mellitus, long-standing hypertension, and diabetic retinopathy presents with gradually worsening fatigue, generalized pruritus, anorexia, and bilateral lower-extremity edema over the past month. She also reports nocturia and frothy urine for several years, but denies gross hematuria or flank pain.

On examination, her blood pressure is 168/92 mmHg, pulse 88/min, and she has periorbital puffiness with bilateral pitting pedal edema. Cardiovascular exam reveals a nondisplaced apex beat and no murmurs, while pulmonary exam is notable for bibasilar crackles. There is evidence of scratch marks on the skin consistent with pruritus.

Laboratory studies demonstrate a serum creatinine of 3.1 mg/dL (baseline 1.6 mg/dL one year prior), eGFR 22 mL/min/1.73 m², BUN 58 mg/dL, potassium 5.6 mmol/L, and bicarbonate 17 mmol/L. Urinalysis reveals 3+ proteinuria, bland sediment, and a urine protein-to-creatinine ratio of 5.2 g/g. HbA1c is 9.2%, and hemoglobin is 9.5 g/dL with normocytic indices. Renal ultrasound shows bilaterally small, echogenic kidneys without hydronephrosis.

Key Clinical Findings

Primary Recommendations

- Consider Diabetic Nephropathy among differential diagnoses
- Obtain Serum creatinine and eGFR for diagnostic confirmation

Primary Diagnosis Clinical Summaries

■ Key Clinical Findings

Finding	Supporting Evidence	Clinical Reasoning
Proteinuria	Clinical presentation	Key diagnostic indicator
Elevated creatinine	Clinical presentation	Key diagnostic indicator
Hypertension	Clinical presentation	Key diagnostic indicator
Diabetes mellitus	Clinical presentation	Key diagnostic indicator
Chronic kidney disease staging	Clinical presentation	Key diagnostic indicator

■ Recommended Tests

Test Name	Type	Priority	Rationale
Serum creatinine and eGFR	Laboratory	Urgent	Diagnostic confirmation
Urine albumin-to-creatinine ratio	Laboratory	Urgent	Diagnostic confirmation
HbA1c	Laboratory	Urgent	Diagnostic confirmation
Complete metabolic panel (electrolytes, BUN)	Laboratory	Urgent	Diagnostic confirmation
Renal ultrasound	Laboratory	Urgent	Diagnostic confirmation

■ Immediate Management

Intervention	Category	Urgency	Clinical Reasoning
Initiate ACE inhibitor or ARB therapy	Medical	Immediate	Critical intervention
Optimize glycemic control with target HbA1c <7%	Medical	Immediate	Critical intervention
Implement blood pressure control with target <130/80 mmHg	Medical	Immediate	Critical intervention
Refer to nephrology for comprehensive management	Medical	Immediate	Critical intervention

Intervention	Category	Urgency	Clinical Reasoning
Initiate dietary sodium and protein restriction	Medical	Immediate	Critical intervention

■ Medications

Medication	Dosage	Route/Frequency	Indication
Lisinopril	10-40 mg	Oral / Daily	Renoprotection and blood pressure control
SGLT2 inhibitor (e.g., Empagliflozin)	10-25 mg	Oral / Daily	Renoprotection and glycemic control
Statin therapy	As appropriate	Oral / Daily	Cardiovascular risk reduction

Diagnostic Landscape Analysis

Detailed Diagnostic Analysis

The ensemble analysis identified **Diabetic Nephropathy** as the primary diagnosis with limited consensus among 2 models.

Detailed Alternative Analysis

Diagnosis	Support	Key Evidence	Clinical Significance
Hypertensive Nephrosclerosis *Evidence: High confidence differential diagnosis, ICD code I12.9 specified in both models*	7.4%	2 models	Unlikely
Chronic Glomerulonephritis *Evidence: Moderate confidence differential diagnosis, ICD code N03.9 specified*	3.7%	1 models	Unlikely
Ischemic Nephropathy *Evidence: Included in differential diagnosis list, Vascular etiology considered*	3.7%	1 models	Unlikely
Chronic Kidney Disease Stage IV *Evidence: Primary diagnosis in second model, Stage specification indicates severity*	3.7%	1 models	Unlikely
Diabetic Nephropathy as primary contributor *Evidence: Listed as differential despite being primary, Different ICD coding approach*	3.7%	1 models	Unlikely
Hypertensive Nephropathy as secondary contributor *Evidence: Secondary contributor designation, High confidence rating*	3.7%	1 models	Unlikely
Membranous Nephropathy *Evidence: Common differential for proteinuric kidney disease*	0.0%	0 models	Unlikely
Focal Segmental Glomerulosclerosis *Evidence: Considered in diabetic patients with nephrotic syndrome*	0.0%	0 models	Unlikely

Minority Opinions

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

• **Hypertensive Nephrosclerosis** (ICD-10: Unknown) - 7.4% agreement (2 models)

Supporting Models: Unknown, Unknown

• **Chronic Glomerulonephritis** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

• **Ischemic Nephropathy** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

• **Chronic Kidney Disease Stage IV** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

• **Diabetic Nephropathy as primary contributor** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

• **Hypertensive Nephropathy as secondary contributor** (ICD-10: Unknown) - 3.7% agreement (1 models)

Supporting Models: Unknown

• **Membranous Nephropathy** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Focal Segmental Glomerulosclerosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Renal Artery Stenosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Analgesic Nephropathy** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Lupus Nephritis** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

• **Amyloidosis** (ICD-10: Unknown) - 0.0% agreement (0 models)

Supporting Models:

Additional Diagnoses Considered:

Management Strategies & Clinical Pathways

Immediate Actions Required

Priority	Action	Rationale	Consensus
1	Initiate ACE inhibitor or ARB therapy	Clinical indication	50%
2	Optimize glycemic control with target HbA1c <7%	Clinical indication	50%
3	Implement blood pressure control with target <130/80 mmHg	Clinical indication	50%
4	Refer to nephrology for comprehensive management	Clinical indication	50%
5	Initiate dietary sodium and protein restriction	Clinical indication	50%

Recommended Diagnostic Tests

Test	Purpose	Priority	Timing
Serum creatinine and eGFR	Diagnostic confirmation	Routine	As indicated
Urine albumin-to-creatinine ratio	Diagnostic confirmation	Routine	As indicated
HbA1c	Diagnostic confirmation	Routine	As indicated
Complete metabolic panel (electrolytes, BUN)	Diagnostic confirmation	Routine	As indicated
Renal ultrasound	Diagnostic confirmation	Routine	As indicated
Urinalysis with microscopy	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
deepseek-chat-v	China	Unknown	<$0.01	Diabetic Nephropathy	General
shisa-v2-llama3	Japan/USA	Free	Free	Chronic Kidney Disease (Stage IV), likely diabetic nephropathy with superimposed hypertensive nephropathy	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.

Detailed Model Responses

Complete diagnostic assessments from each model:

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

Primary Diagnosis: Diabetic Nephropathy (ICD-10: E11.22) - Confidence: 0.95

Differential Diagnoses:

- Hypertensive Nephrosclerosis (ICD: I12.9) - 0.65
- Chronic Glomerulonephritis (ICD: N03.9) - 0.45
- Ischemic Nephropathy (ICD: N28.0) - 0.35

Key Clinical Findings:

- Poorly controlled diabetes (HbA1c 9.2%)
- Nephrotic-range proteinuria (UPCR 5.2 g/g)
- Rising creatinine (3.1 mg/dL) with low eGFR (22 mL/min)
- Bilateral small echogenic kidneys

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

Primary Diagnosis: Chronic Kidney Disease (Stage IV), likely diabetic nephropathy with superimposed hypertensive nephropathy (ICD-10: N18.4) - Confidence: 0.95

Differential Diagnoses:

- Diabetic Nephropathy (primary contributor) (ICD: E11.2) - 0.85
- Hypertensive Nephropathy (secondary contributor) (ICD: I12.9) - 0.8
- Heart Failure with Renal Dysfunction (ICD: I50.9) - 0.65

Key Clinical Findings:

- Rising serum creatinine (3.1 mg/dL, eGFR 22 mL/min/1.73 m^2)
- 3+ proteinuria with UPCR 5.2 g/g
- Hypertension (168/92 mmHg)
- Hyperkalemia (5.6 mmol/L)