

Clinical Note Generation with CoT

SOAP Note with CoT-Enhanced Reasoning

S - Subjective

CC: "Chest pain × 2 hours"
HPI: Substernal pressure, radiates to L arm, diaphoresis
PMH: HTN, DM, dyslipidemia
Meds: Metformin, Lisinopril

O - Objective

VS: BP 160/95, HR 110, O₂ 96%
PE: Diaphoretic, chest clear
ECG: ST elevation V2-V4
Labs: Troponin 2.4 (↑)
CXR: No acute findings

A - Assessment (CoT)

Reasoning Chain:

1. Chest pain + diaphoresis
→ cardiac vs non-cardiac
2. ST elevation + 1 troponin
→ confirms STEMI
3. Risk factors: DM, HTN
→ high TIMI score (5)

P - Plan

IMMEDIATE:

- Cath lab activation STAT
- ASA 325mg, Ticagrelor 180mg
- Heparin bolus + gtt
- Morphine PRN pain
- Cardiology consult

CoT Integration Benefits:

- ✓ Transparent reasoning
- ✓ Auditable decisions
- ✓ Teaching tool
- ✓ Reduces errors
- ✓ Legal documentation

CoT-Enhanced Assessment Example:

"Given presentation of substernal chest pressure + radiation to left arm + diaphoresis (classic ACS triad) + ECG showing ST elevation V2-V4 (anterior wall) + troponin elevation (2.4, significant) + TIMI score 5 (high risk), this is consistent with acute STEMI. DDx considered: unstable angina (ruled out by troponin), PE (low Wells score), GERD (atypical presentation)."

Documentation: CoT makes clinical reasoning explicit and auditable