

## Real-World Case Studies

### Case 1: Sepsis Detection

**Presentation:** 72yo, fever 39.2°C, confusion, HR 125, BP 85/50

**CoT Process:** SIRS criteria → infection source → SOFA score → sepsis diagnosis

**Outcome:** Early recognition → prompt antibiotics → improved survival

### Case 2: Atypical Presentation

**Presentation:** 45yo female, fatigue, no chest pain, mild dyspnea

**CoT Process:** Atypical symptoms → considered MI (women present differently) → ECG → troponin → diagnosed NSTEMI

**Outcome:** CoT helped recognize atypical presentation, standard prompting missed it

### Case 3: Complex Comorbidity

**Presentation:** DM + CKD + CHF patient with worsening shortness of breath

**CoT Process:** Multiple potential causes → systematically evaluated each → identified CHF exacerbation + UTI

**Outcome:** Treated both conditions appropriately, avoided missing secondary diagnosis

**Lesson:** CoT excels at complex, atypical cases requiring careful reasoning