

# Enhancing diagnostic accuracy and treatment appropriateness in cardiac transthyretin amyloidosis through natural language processing: a retrospective analysis

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## INTRODUCTION

Diagnosis of cardiac transthyretin amyloidosis (cardiac ATTR) can be challenging due to the difficulty of collating nonspecific clinical findings across the electronic health record (EHR)

Natural language processing (NLP) can scan the entire EHR to identify potential cardiac ATTR diagnoses and assess treatment appropriateness, potentially closing care gaps and enhancing patient outcomes

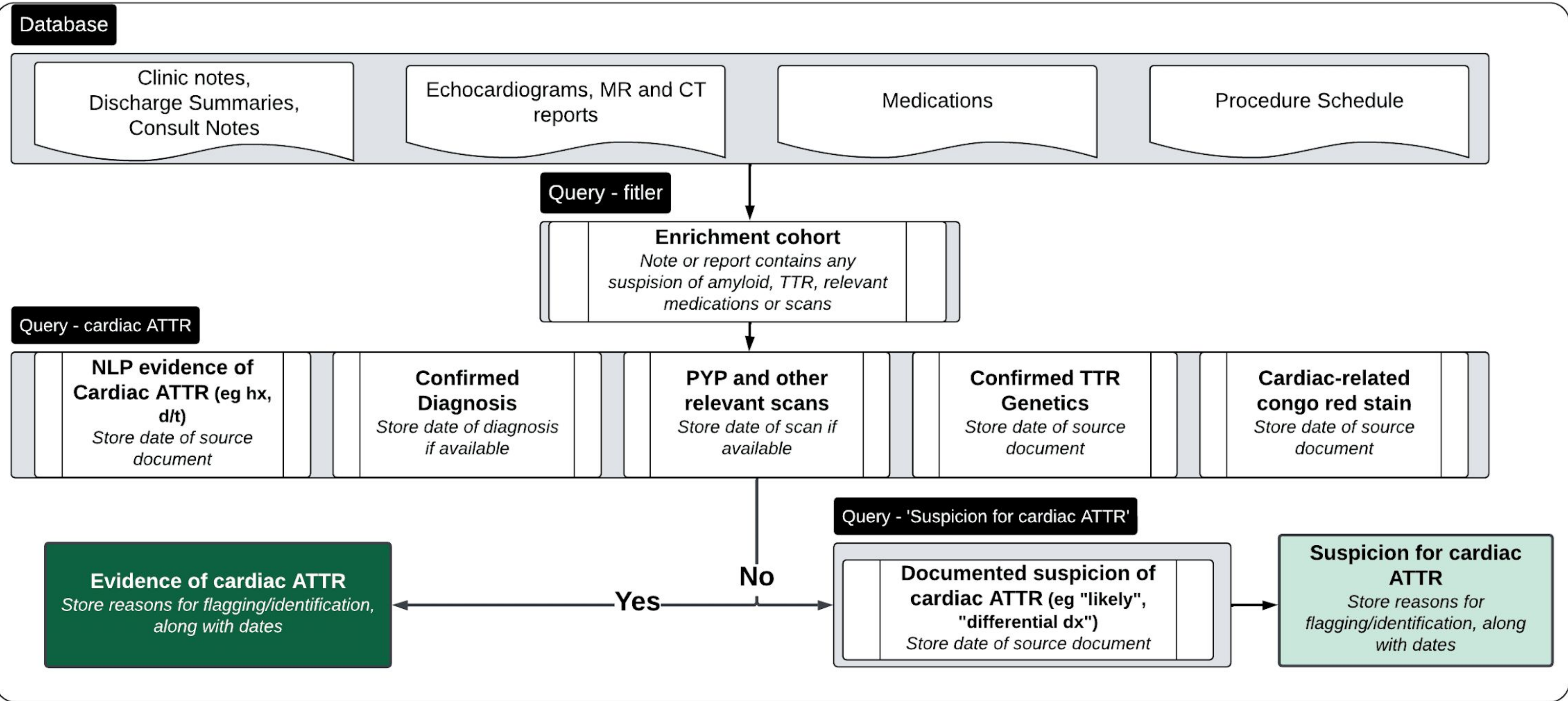
## METHODS

**Data**  
Clinic notes, discharge summaries, diagnostic results and reports, medications, and procedure schedules.

- Definitions**
- **Cardiac ATTR:** Search for diagnosis codes, evidence from the patient's present illness narrative, positive PYP, Congo red on heart biopsy, or positive ATTR genetics with cardiac involvement.
  - **Suspicious for cardiac ATTR:** Without diagnostic, but evidence from the patient's present illness narrative that cardiac ATTR is considered.

**Goal:** Identify potential care gaps for patients 1) with cardiac ATTR (no evidence of being on medication or it being considered), and 2) under suspicion of cardiac ATTR (no evidence of an ATTR diagnostic scheduled).

Figure 1. Workflow for identifying cardiac ATTR risk through NLP-powered queries



## SUMMARY

- Patients with cardiac ATTR or with strong suspicion for cardiac ATTR were successfully identified using NLP.
- This method could streamline clinical workflows, reduce diagnostic delays, and enhance multidisciplinary collaboration, ultimately improving healthcare efficiency and reducing costs.

## RESULTS

Figure 2. Patients with or under suspicion of cardiac ATTR

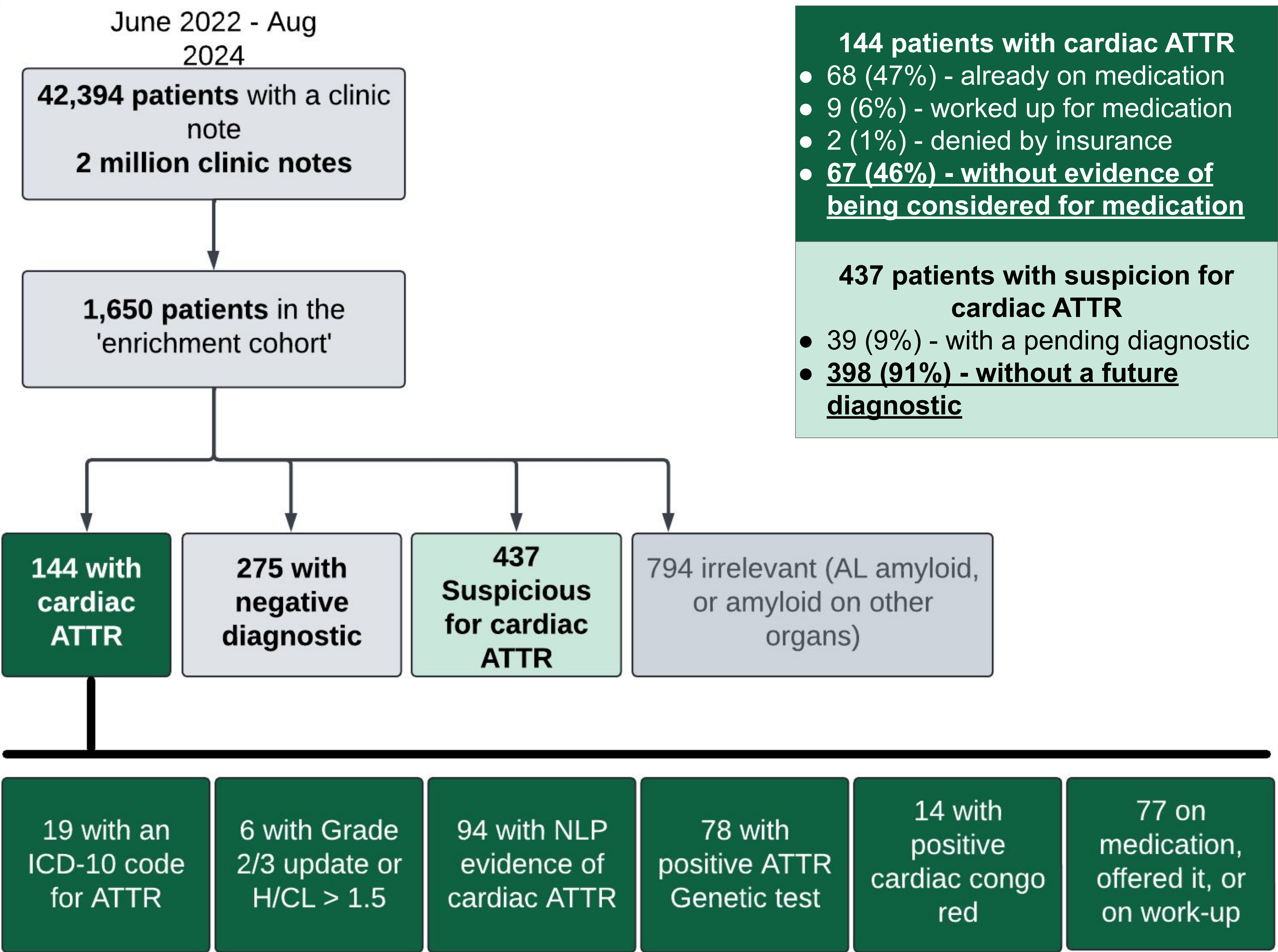


Figure 2. Cardiac ATTR was identified in 144 patients (precision 87% in a randomly selected cohort of 31 patients).