

# MythTriage: Scalable Detection of Opioid Use Disorder Myths on a Video-Sharing Platform



Hayoung Jung<sup>1</sup>, Shravika Mittal<sup>3</sup>, Ananya Aatreya<sup>2</sup>, Navreet Kaur<sup>2</sup>, Mumun De Choudhury<sup>3</sup>, Tanushree Mitra<sup>2</sup>

<sup>1</sup> PRINCETON UNIVERSITY

<sup>2</sup> UNIVERSITY of WASHINGTON

<sup>3</sup> Georgia Institute of Technology

hayoung@cs.princeton.edu, tmitra@uw.edu

## Motivation

- **Opioid-Use Disorder (OUD):** Leading cause of death in the U.S. (108K in 2023)
- Platforms like YouTube are alternatives for health info & recovery guidance
- Yet, online myths towards OUD **fuel treatment hesitancy** and **distrust** in public health. Understanding their prevalence is **crucial** for **public health interventions**.

**GOAL:** Scalably measure the prevalence of Opioid Use Disorder (OUD) Myths on a Video-Sharing Platform

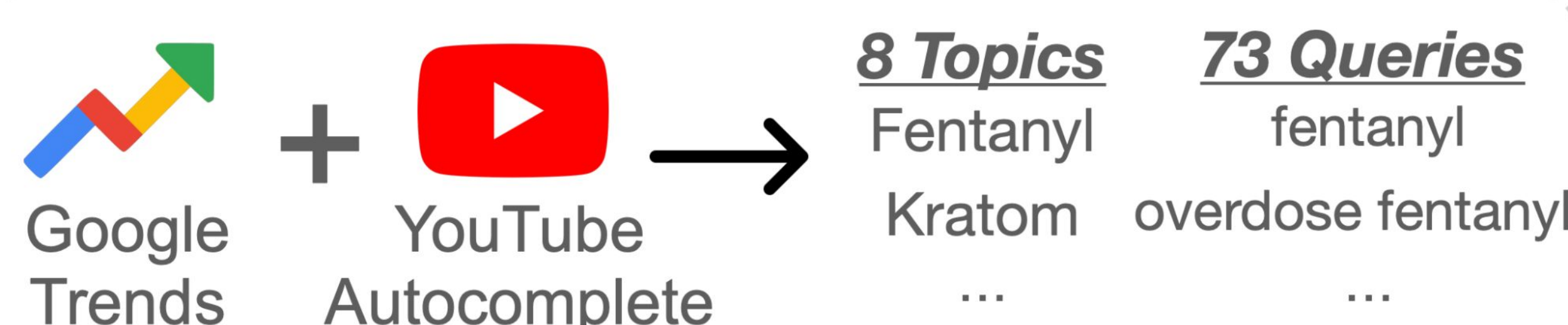
## Takeaways

MythTriage can...

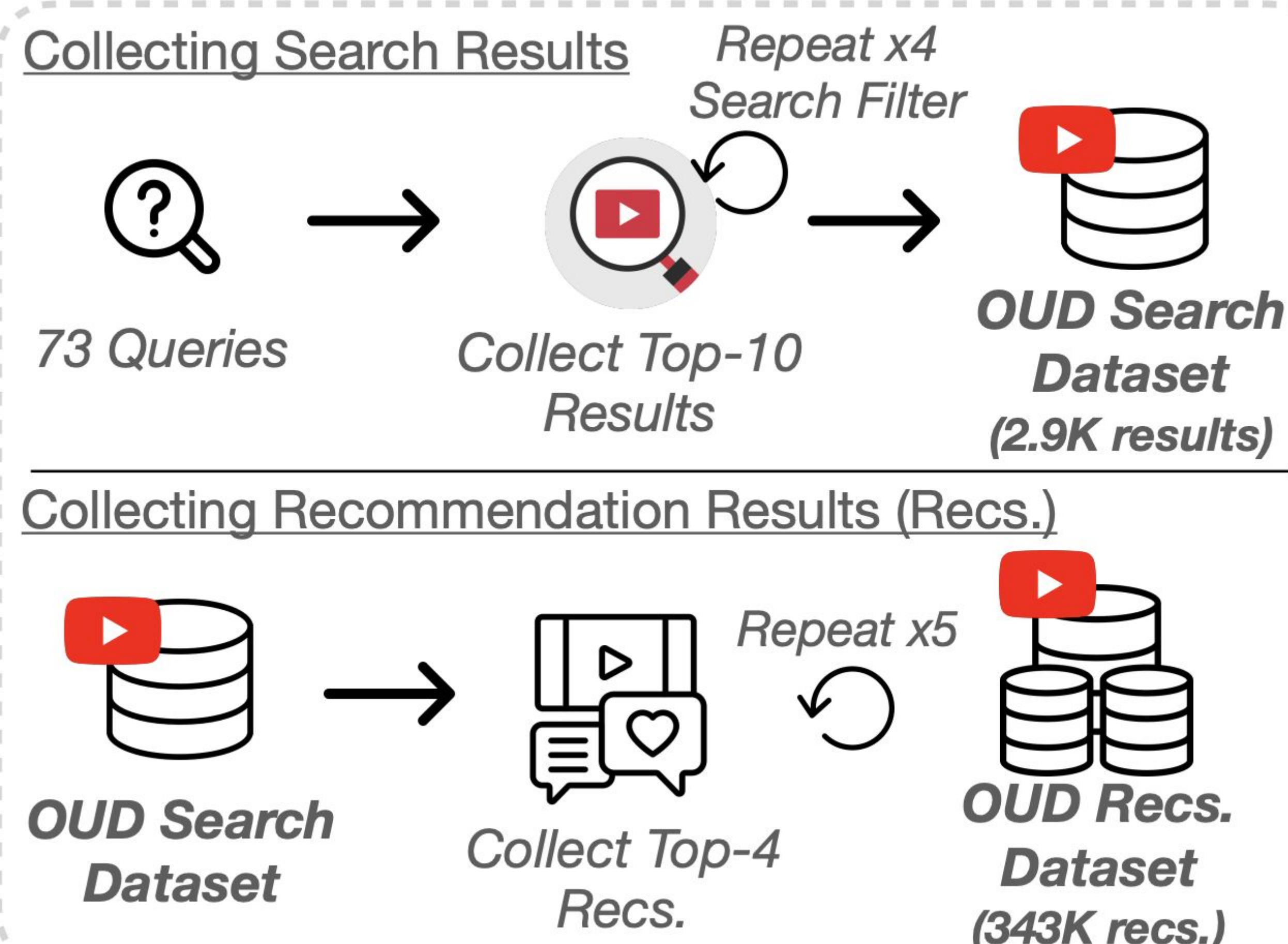
- Provide **actionable insights** and inform potential **health interventions**
- Integrate in **platform moderation workflows** to flag OUD myths.
- Support third-party **platform audits**.

## 1. Data Collection

### 1.1 Curate Popular Opioid Topics and Queries

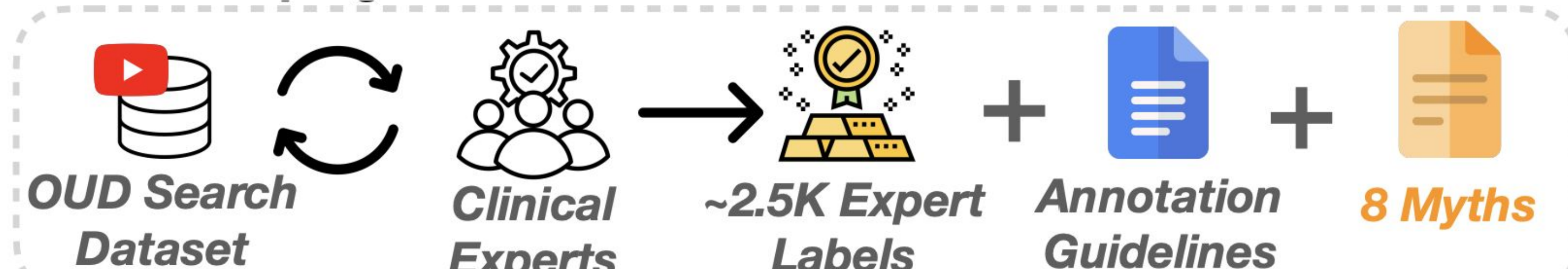


### 1.2 Collect Data on YouTube



## 2. Data Labeling for OUD Myths

### 2.1 Developing Data Annotation Scheme (with Experts!)

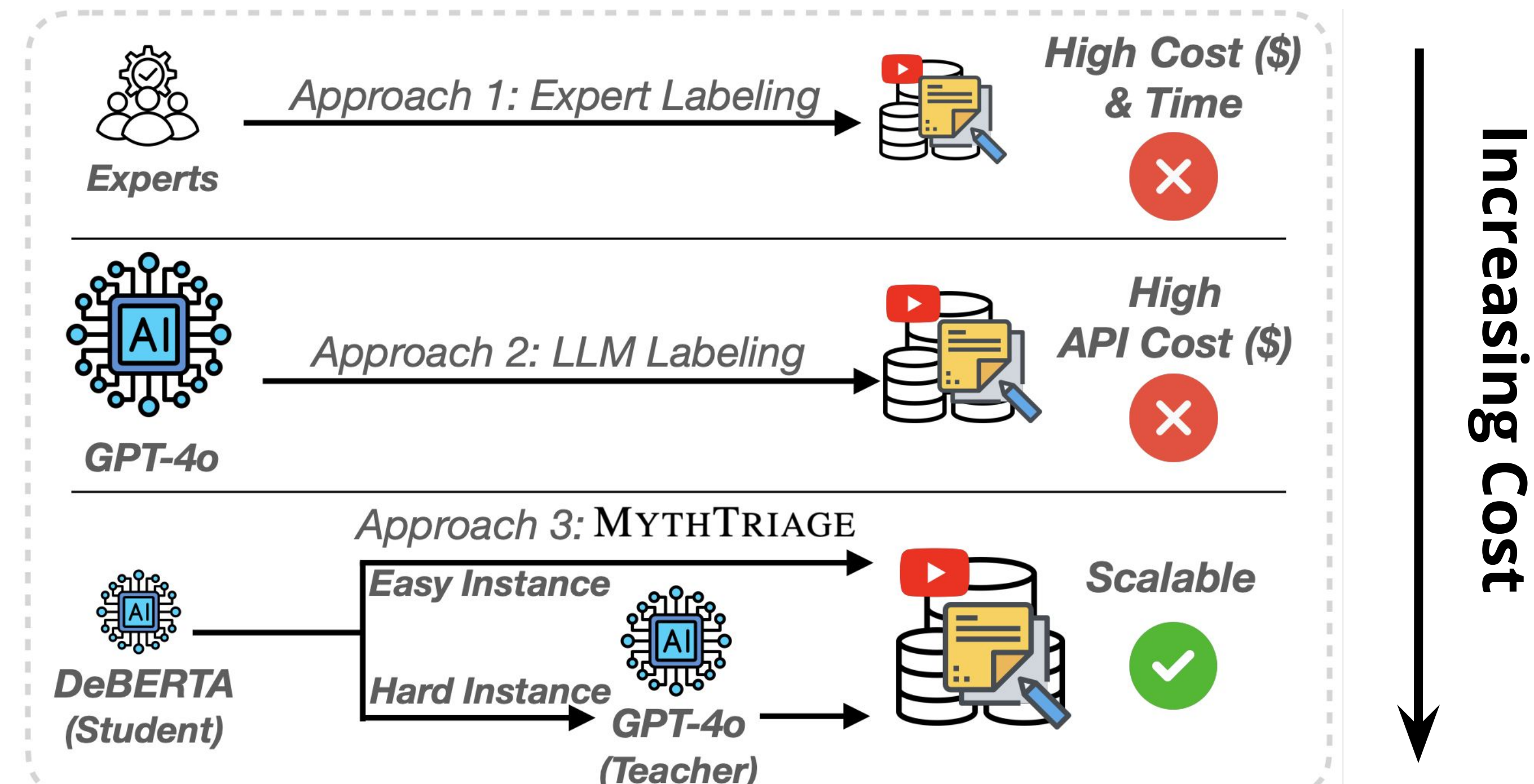


**Example Myth 1:** Medication-assisted treatments (MAT) are merely replacing one drug with another

"[suboxone] is an opioid so I don't count that as clean time." — (supports M1)

"[Buprenorphine] was so helpful in treating addiction." — (opposes M1)

### 2.2 Labeling for Myths in YouTube Videos



## MythTriage Evaluations

**Finding #1:** MythTriage offers strong performance + **reduce cost by >76%**. **Scalable** for labeling!

Left: Macro F1, Right: Prop. deferred to GPT-4o

Myth	GPT-4o	DeBERTa	MYTHTRIAGE
M1	0.87 (1)	0.77 (0)	0.86 (0.60)
M2	0.85 (1)	0.70 (0)	0.80 (0.57)
M3	0.86 (1)	0.76 (0)	0.86 (0.67)
M4	0.82 (1)	0.62 (0)	0.76 (0.31)
M5	0.82 (1)	0.60 (0)	0.68 (0.28)
M6	0.86 (1)	0.76 (0)	0.83 (0.52)
M7	0.85 (1)	0.74 (0)	0.81 (0.44)
M8	0.87 (1)	0.78 (0)	0.81 (0.05)

## Prevalence in Youtube Search

**Finding #2:** 20% of search results overall supports OUD myths.

**Finding #3:** Kratom has highest myth prevalence (36% supp. vs. 22% opp.)

Label Distribution

Bias Score	Topic	Support	Neither	Oppose
0.15	Kratom	0.36	0.42	0.22
-0.02	Heroin	0.22	0.53	0.25
-0.03	Codeine	0.04	0.90	0.07
-0.04	Methadone	0.36	0.24	0.40
-0.14	Percocet	0.03	0.79	0.18
-0.20	Fentanyl	0.13	0.54	0.33
-0.21	Narcan	0.02	0.74	0.24
-0.31	Suboxone	0.25	0.19	0.56

## Prevalence in YouTube Recommendations

**Finding #4:** At level 1, 12.7% of recommendation to myth-supporting videos link to other supporting videos, increasing to 22% by level 5.

Recommendation Transition across Levels

