About Me



NAME

Heejun Kim

TITLE

Associate Professor in Health Informatics

YEARS AT UNT

7 years

RESEARCH FOCUS AREAS

- Drug Safety Monitoring
- Mental Health Support
- Credibility of Health Information

Proportional Reporting Ratio (PRR)

- Assesses the frequency of a specific ADR reported for a particular drug, relative to the frequency of that same ADR reported for all other drugs.

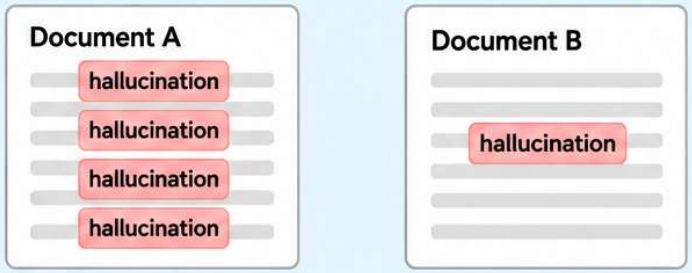
Type of Medications	Hallucination	All other reactions
Adderall	50	50
All Other Medications	100	900

$$PRR = \frac{\frac{a}{a+b}}{\frac{c}{c+d}} = \frac{\frac{50}{50+50}}{\frac{100}{100+900}} = 5$$

- Simple drug–ADR pairs without rich patient-level variables limit the application of more sophisticated algorithms such as deep learning.

Term Frequency (TF)

When a term occurs frequently in a document, its topical importance increases, and vice versa.



High term frequency (TF is high)

Low term frequency (TF is low)

Inverse Document Frequency (IDF)

When a term occurs in most documents, its topical importance decreases, and vice versa.

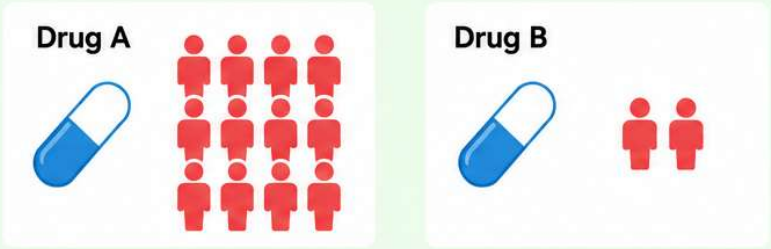


Term appears in many documents (IDF is low)

Term appears in few documents (IDF is high)

Event Frequency (EF)

When an adverse event occurs frequently in a drug, its signal strength increases, and vice versa.

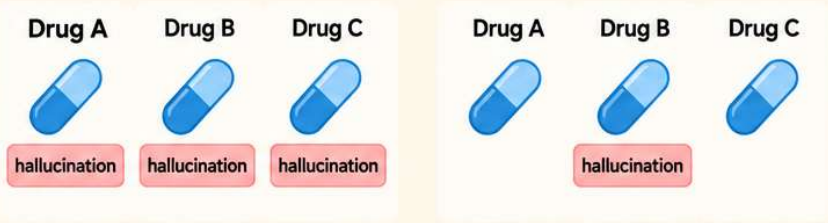


High event frequency (EF is high)

Low event frequency (EF is low)

Inverse Drug Frequency (IDF)

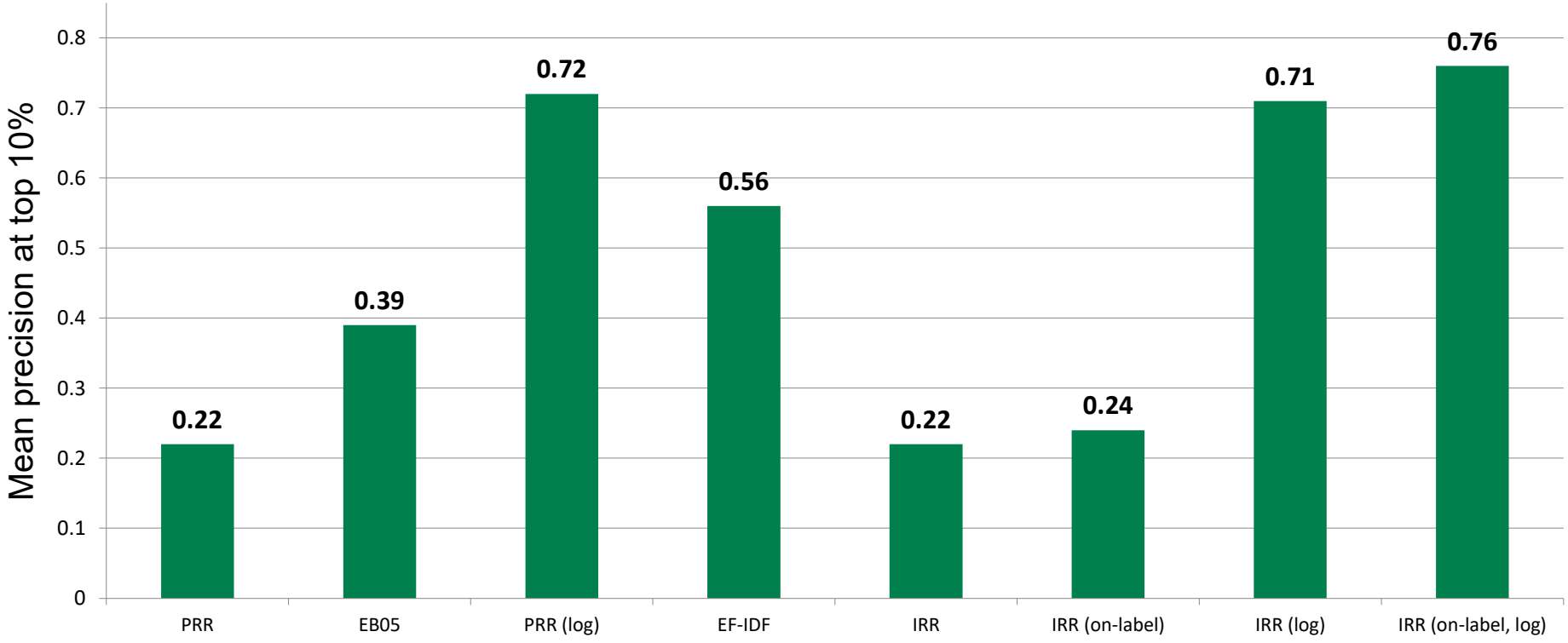
When an adverse event occurs in most drugs, its signal strength decreases, and vice versa.



Event occurs in many drugs (IDF is low)

Event occurs in few drugs (IDF is high)

Results: Precision-at-10%



Target Organization and Solication for Grant

- Target Organization
    - FDA CDER Office of Surveillance and Epidemiology
    - National Institute of General Medical Sciences (NIGMS)
    - Roche
- Solication
    - FDA Regulatory Science Extramural Research and Development Projects
    - PCORI Improving Methods for Conducting Patient-Centered Comparative Clinical Effectiveness Research
- External Collaborators
    - Dr. Usha Sambamoorthi, UNTHSC
    - Dr. Haekyung Jeon-Slaughter, UT Southwestern