

A Semi-Automated System For Detecting Treatment Associated Adverse Events From Clinical Notes In Electronic Health Records Systems

Tech ID: 34508 / UC Case 2023-109-0

VALUE PROPOSITION

Adverse events (AE) are harmful and negative outcomes that happen when a patient has been provided with medical care and they frequently occur in any medical system, with at least one in ten patients affected.

Medical treatment may include a procedure, surgery, or medication, and AEs may include side effects, injury, psychological harm or trauma, or death. Any patient who undergoes treatment may experience a negative outcome as a result of that treatment.

TECHNOLOGY DESCRIPTION

UCSF investigators have developed a deep learning model for identifying treatment-related adverse events using electronic health record (EHR) data. The model was adapted to the task of mining for SAE to steroid-sparing immunosuppressants in outpatient clinic notes for patients with IBD.

RELATED MATERIALS

- ▶ [Silverman, A. L., Madhumita Sushil, Balu Bhasuran, Ludwig, D., Buchanan, J., Racz, R., Mahalakshmi Parakala, Samer El-Kamary, Ohenewaa Ahima, Belov, A., Choi, L., Billings, M., Li, Y., Habal, N., Liu, Q., Tiwari, J., Butte, A. J., & Rudrapatna, V. A. \(2024\). Algorithmic Identification of Treatment-Emergent Adverse Events From Clinical Notes Using Large Language Models: A Pilot Study in Inflammatory Bowel Disease. *Clinical Pharmacology & Therapeutics*, 115\(6\), 1391–1399.](#)

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

AI, machine learning, electronic health records, irritable bowel disease, treatment-related adverse events, algorithm, digital health

CATEGORIZED AS

- ▶ **Biotechnology**
- ▶ Health
- ▶ **Medical**
- ▶ Diagnostics
- ▶ Disease: Autoimmune and Inflammation
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- ▶ Software

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