The ontology of Adverse Events in 2022

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What is OAE ?

Medical Interventions

- Vaccination
- Drug administration
- Surgery

Adverse Event

an adverse event is any undesirable experience associated with the use of a medical product in a patient.

The Ontology of Adverse Events (OAE) was launched in 2014 to define, standardize and integrate various adverse events (AEs) arising subsequent to medical interventions (such as vaccination, drug administration, and surgery).

OAE developed and updated

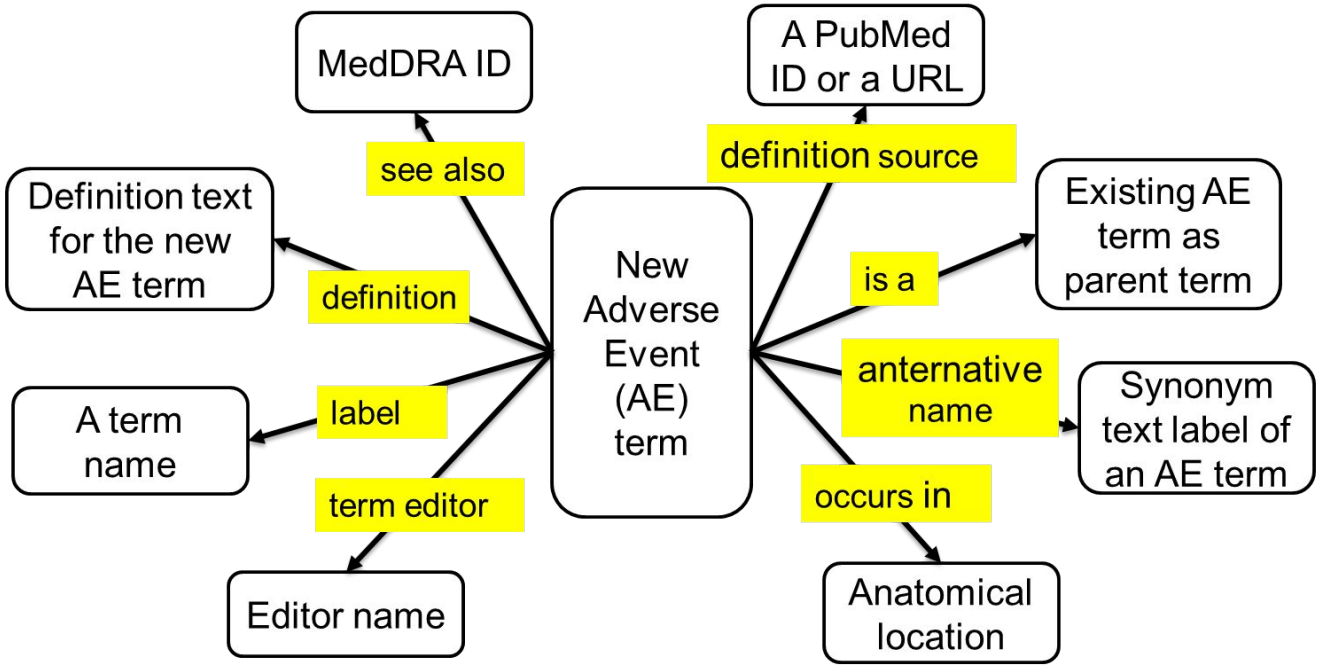

Figure 1. AE term annotation

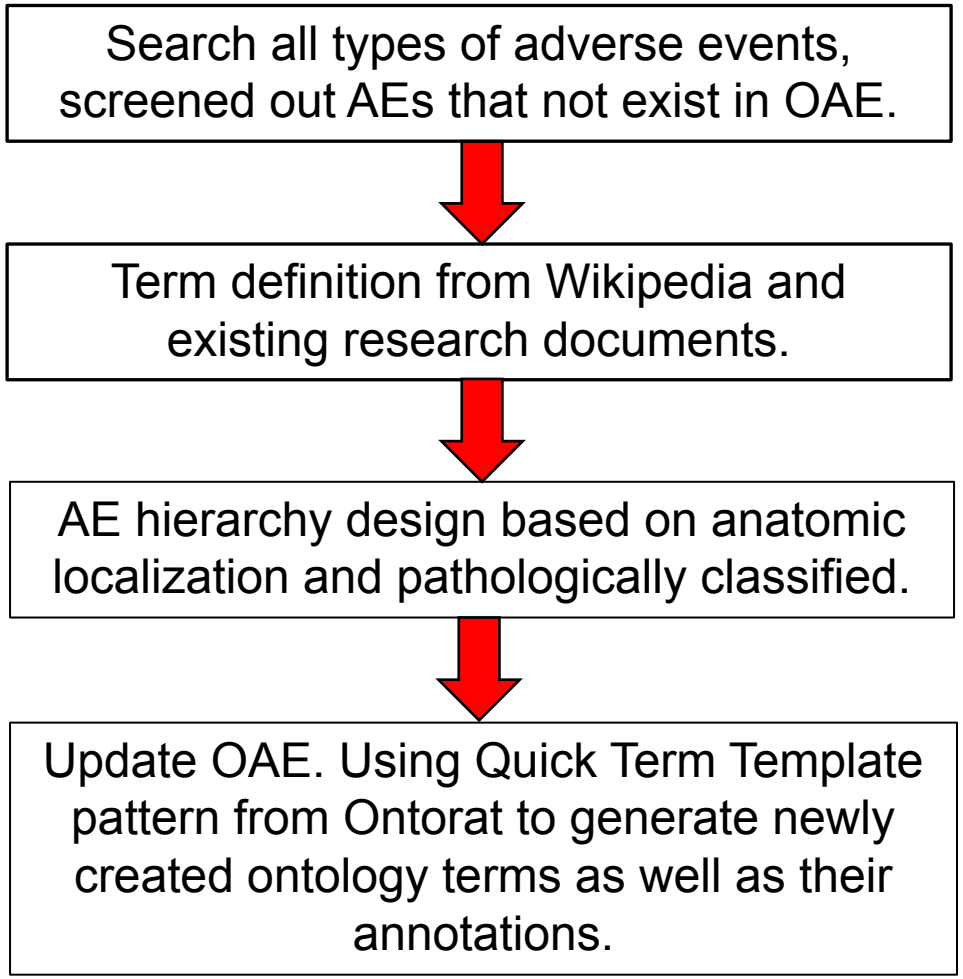

Figure 2. The basic process of OAE term update.

Current OAE

2014

OAE was launched and has 3,088 ontology terms.

2022

OAE has 10829 ontology terms, including:
10,589 classes,
120 object properties,
3 datatype properties,
113 annotation properties,
4 instances.

Index	Ontology Prefix	Class	Object Property	Datatype Property	Annotation Property	Instance	Total
1	BFO	21	8	0	2	0	31
2	BSPO	0	17	0	0	0	17
3	DOID	1	0	0	0	0	1
4	GO	7	0	0	0	0	7
5	IAO	4	1	0	16	2	23
6	OAE	9,397	8	2	3	0	9,410
7	OBI	11	2	0	2	0	15
8	OGMS	6	0	0	0	0	6
9	PATO	10	0	0	0	0	10
10	RO	0	64	0	11	1	76
11	UBERON	1,124	0	0	0	1	1,125
12	UBPROP	0	0	0	17	0	17
13	VO	7	0	0	0	0	7
14	core	0	18	0	17	0	35
15	oboInOwl	1	0	0	17	0	18
16	owl	0	1	0	3	0	4
17	pato	0	0	0	5	0	5
18	protege	0	0	1	0	0	1
19	rdf-schema	0	0	0	4	0	4
20	ro.owl	0	1	0	0	0	1
21	subsets	0	0	0	1	0	1
22	uberon	0	0	0	3	0	3
23	NoPrefix	0	0	0	12	0	12
Total	-	10,589	120	3	113	4	10,829

The application of OAE

The OAE provides a novel and powerful framework for analyzing possible causal associations between medical interventions and adverse events and the underlying mechanisms. The integration of OAE with other applications such as literature mining makes it possible to systemically analyze molecular mechanisms of adverse events.

The OAE can also be integrated with statistical analysis of AE case report data and potentially with high throughput gene expression data analysis for better understanding fundamental gene interactions and pathways of various adverse events. Such studies will likely impact our ability to diagnose, preventing, and treat adverse events in the future.

THANKS FOR YOUR ATTENTIONS !