

Towards an Adverse Event Reporting Ontology

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Reports of adverse events that occur during clinical trials help identify issues with treatment safety and efficacy, and allow for better education of health practitioners and the general public, ultimately increasing patient safety. However, current methods used for spontaneous adverse events reporting are not sufficient, mitigating their usefulness. The Brighton Collaboration is a global network of world-renowned experts providing high quality vaccine safety information. Based on these guidelines, each adverse event following immunization (AEFI) will be decomposed into its constitutive elements (e.g., motor manifestations occurring during seizure), and will be encoded into an ontology. Ontologies are formal representations of knowledge using some well-defined logic. They can streamline the process of integrating, accessing and querying data by providing a standard description of resources. We contributed to the development of several ontologies relevant to this project and have started work on the Adverse Event Reporting Ontology (AERO), presenting a prototype based on the Brighton case definition of seizure. Using queries against the created ontological model, the system can be used to guide the physician at the time of data entry, by

making sure that (i) the event they report indeed matches the Brighton case definition; (ii) we store additional information that they may not have reported upon otherwise; and (iii) we provide support to establish the correct diagnosis based on reported symptoms. Unambiguous and complete representation of adverse events following immunization will ultimately increase accuracy and quality of reporting within the PCIRN, paving the way for further adoption by Health Canada.

Availability

The latest version of the AERO file is available at: <http://purl.obolibrary.org/obo/aero.owl>.

Project home and documentation are at: <http://purl.obolibrary.org/obo/aero>.

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