PHAC/CIHR Influenza Research Network

NCBO/IDO workshop
Baltimore · December 9th 2010

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PCIRN mission

- Canadian national network of key influenza vaccine researchers.
- Develops and tests methodologies/methods related to the evaluation of pandemic influenza vaccines as they pertain to safety, immunogenicity and effectiveness, and program implementation and evaluation.
- http://www.pcirn.ca/

PCIRN structure

- Theme I: Rapid Trials
- Theme II: Rapid Implementation
- Theme III: Vaccine Coverage
- Theme IV: Vaccine Safety
- Theme V: Vaccine Effectiveness
- + support groups

More than 90 investigators across 30 institutions

IT support group

- Aim: to standardize data (same variables, same coding) and to assure the use of standard validated definitions – if possible from an ontological resource.
- Objective is to ensure data quality and consistency across the network.

Standardization

- Determine controlled vocabulary
- **M**inimum **I**nformation: checklist to identify gap
- Identify existing ontologies terms supporting the network, and contribute to/develop resources as needed

Ontologies

- Areas addressed: Demographics, Lab shipping and results information, Vaccine details, Exposure, Specificity
- Existing relevant resources: IDO (Influenza and Vaccine Ontology), OBI (Ontology for Biomedical Investigations), OGMS (Ontology for General Medical Science)…

Neuraminidase typing

- FLU_0000779, “An assay which aims at determining the neuraminidase type of an influenza virus”

assay (OBI_0000070)and (*has_specified_output* some

('**measurement datum**' (IAO_0000409) and ('*is about*' some **neuraminidase** (FLU_0000753))))

Influenza Ontology

- **Influenza neuraminidase** (FLU_0001034) is_a neuraminidase (FLU_0000753) part_of some **Influenza virion** (FLU_0000751)
- Influenza virion is_a **virion** (IDO_0000508)
- Neuraminidase is_a **protein** (PRO_000000001) which *has_function* some **catalytic activity** (GO_0003824)
- Infers is_a **enzyme** (OBI_0000427)

Viral RNA extraction

- **viral RNA extraction** (FLU_0000829) is_a **RNA extraction** (OBI_0666666)
- *has_specified_input* some **Viruses** (NCBITaxon_10239)
- has_specified_output some **ribonucleic acids** (ChEBI_33697)
- [..] **sequencing assay** (OBI_0600047) [..] GenBank submission

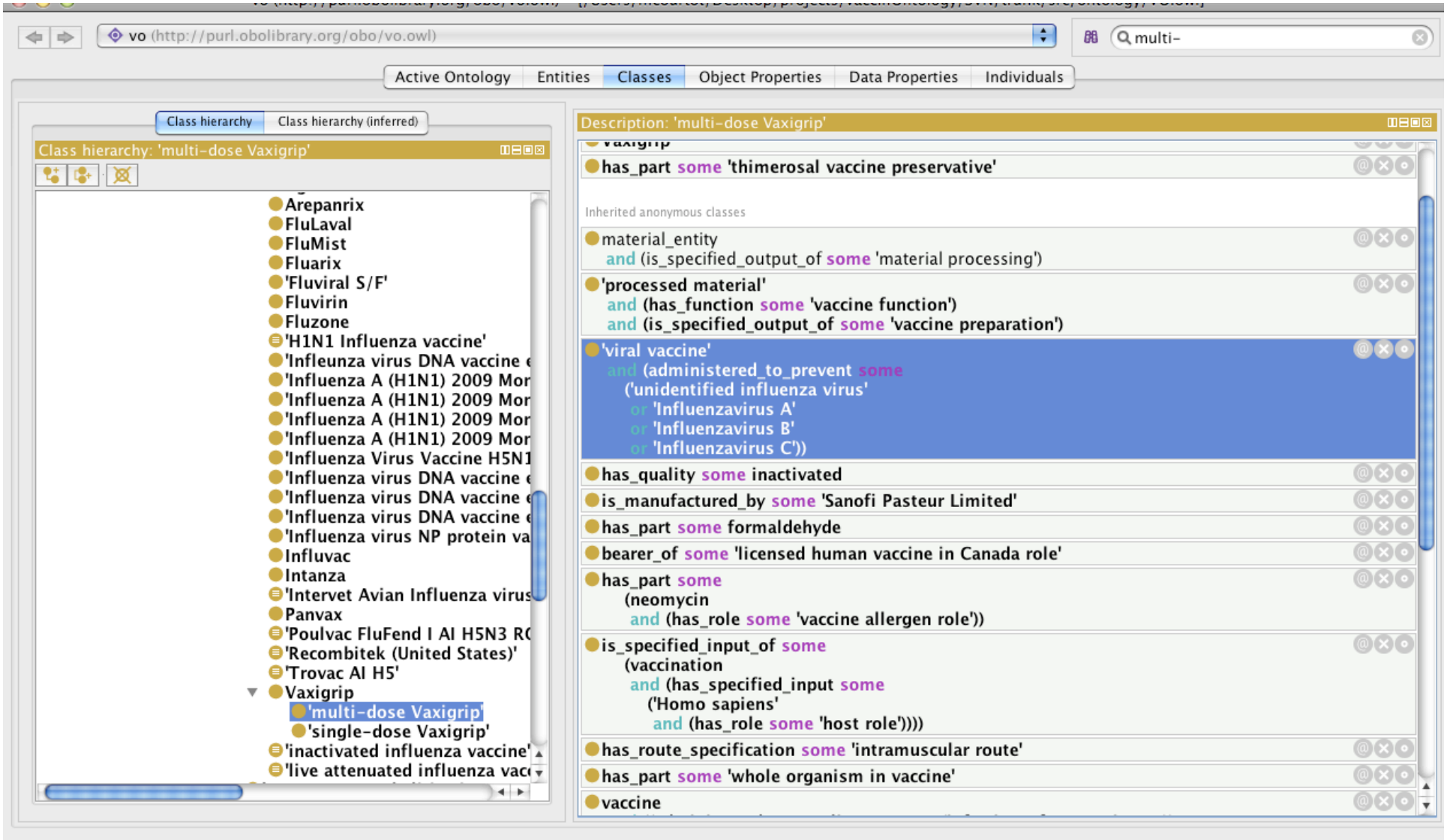
Vaccine Ontology

- Canadian vaccines information
  - Manufacturer
  - Vaccine type (eg inactivated)
  - Adjuvant, preservatives
  - Potential allergens
  - Route of administration
  - Dose information
  - …

Vaxigrip

- *has_part* **neomycin** (ChEBI_44577) and (*has_role* some 'vaccine allergen role'))
- *has_part* thimerosal vaccine preservative
  - 'vaccine additive' and (*has_role* some 'vaccine preservative role')
  - *has_part* some **thimerosal** (ChEBI_9546)
- **Intramuscular injection** (OBI_0000934) (through **skeletal muscle tissue** (FMA_14069))
- […]

VO – Vaccine Ontology



Advantages of using IDO

- Less work for me
- Common infrastructure
- Collaborative platform
- Set of resources following similar guidelines and development principles

Thank you

- OBI, IAO, OGMS and IDO teams
- OBO Foundry
- PHAC/CIHR Influenza Research Network