



# GRIIS

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## An Ontological Representation of Sex and Gender Information

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# Plan

- Motivations
- Existing representations
- Formalization of sex and gender informational entities
- Discussion

# Motivations

- Context of a Learning Health System in Quebec (PARS3)
- DEMO: DEMographics Ontology
- Sex and gender are important health determinants

# Sex & Gender: International standards

- Canada Health Infoway Sex and Gender Working Group
- Distinction between sex and gender already acknowledged in main international health standards
- HL7 FHIR, SNOMED CT, LOINC

# Sex & Gender: medical records

- Canada Health Infoway Sex and Gender Working Group

## Sex/gender

- Distinction between sex and gender is widely acknowledged in main international standards

- M
- F
- Other/Unknown

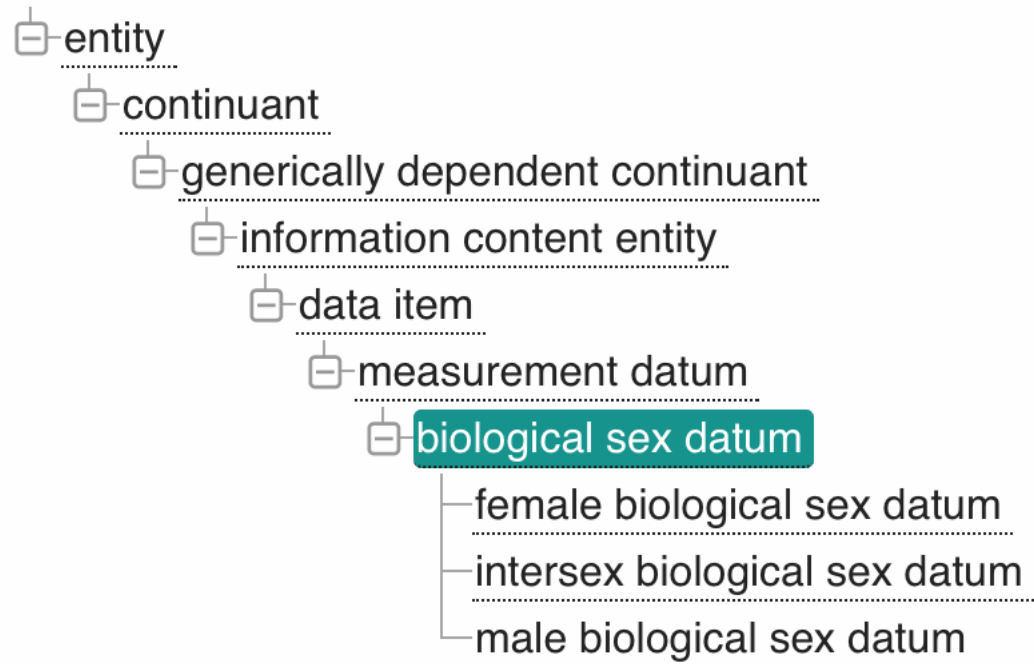
- HL7 FHIR, SNOMED CT, LOINC, DICOM

# Sex and gender in ontologies

- Sex and gender VS. Sex and gender information content entity
- The Gender, Sex and Sexual Orientation Ontology (GSSO)

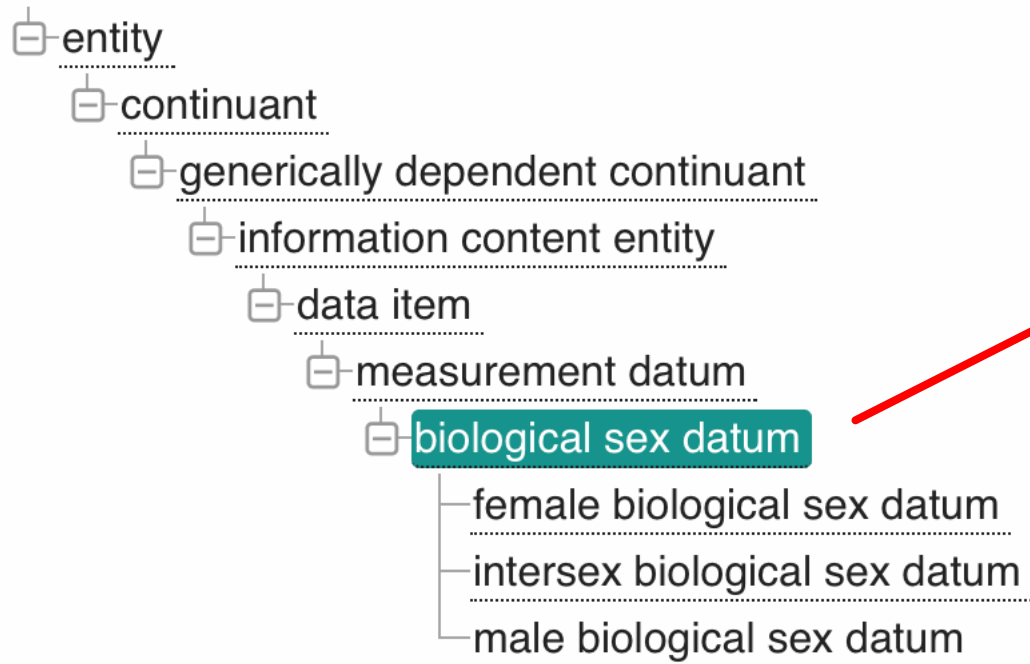
# Sex and gender information content entities (ICE)

- Vaccine ontology (VO)

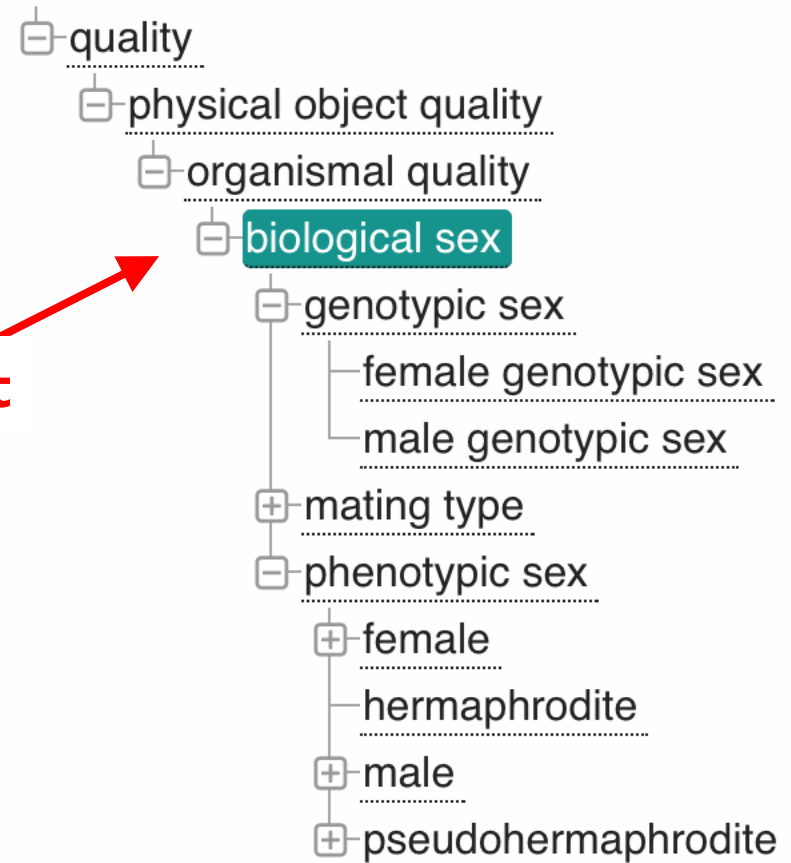


# Sex and gender information content entities (ICE)

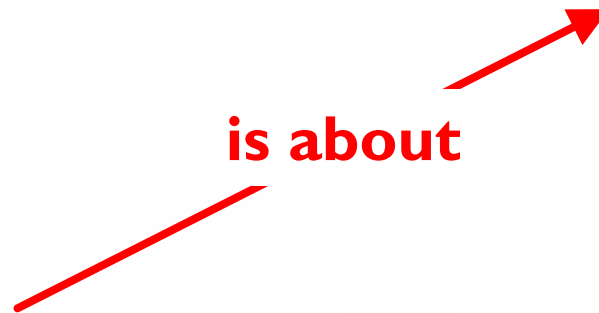
- Vaccine ontology (VO)



## The Phenotype and Trait Ontology (PATO)



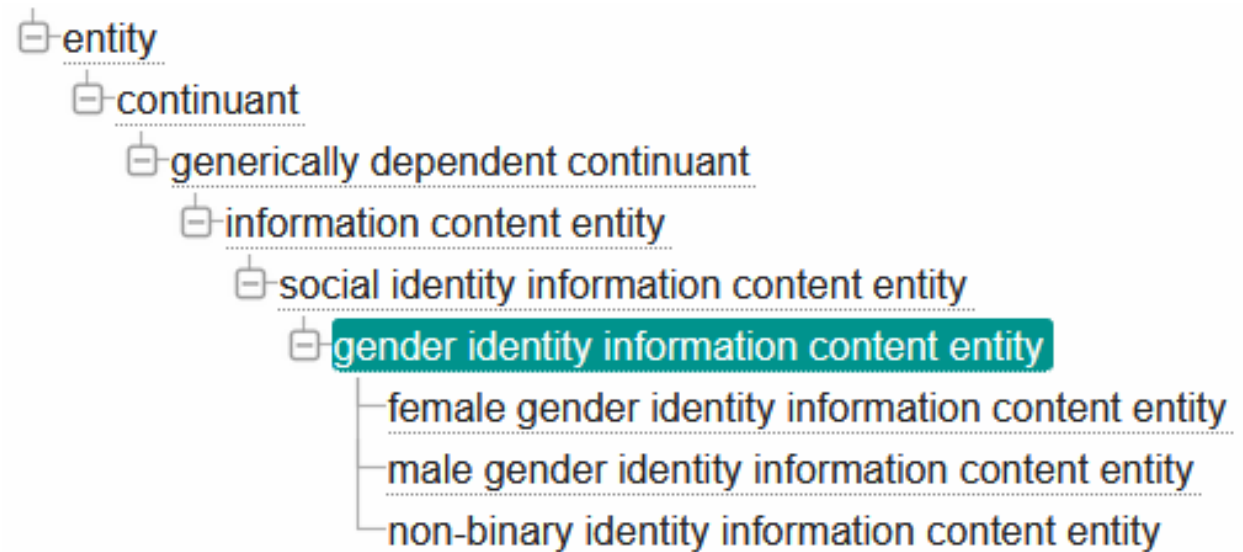
**is about**





# Sex and gender information content entities (ICE)

- Ontology of Medically related Social Entities (OMRSE)



# Formalizing sex and gender ICE

- DEMographics Ontology (DEMO)
- Formalize informational entities
- Expand the binary representation
- Take into account ambiguous record

# Formalizing sex and gender ICE

- Adding non binary/intersex classes in VO and OMRSE
- *DEMO:biological sex or gender identity ICE*
- Equivalent to: *VO:biological sex datum OR OMRSE:gender identity ICE*

# Formalizing sex and gender ICE

- Adding non binary/intersex classes in VO and OMRSE

DEMO:*female biological sex or woman gender identity ICE*

- D DEMO:*male biological sex or man gender identity ICE*

DEMO:*intersex biological sex or non-binary identity ICE*

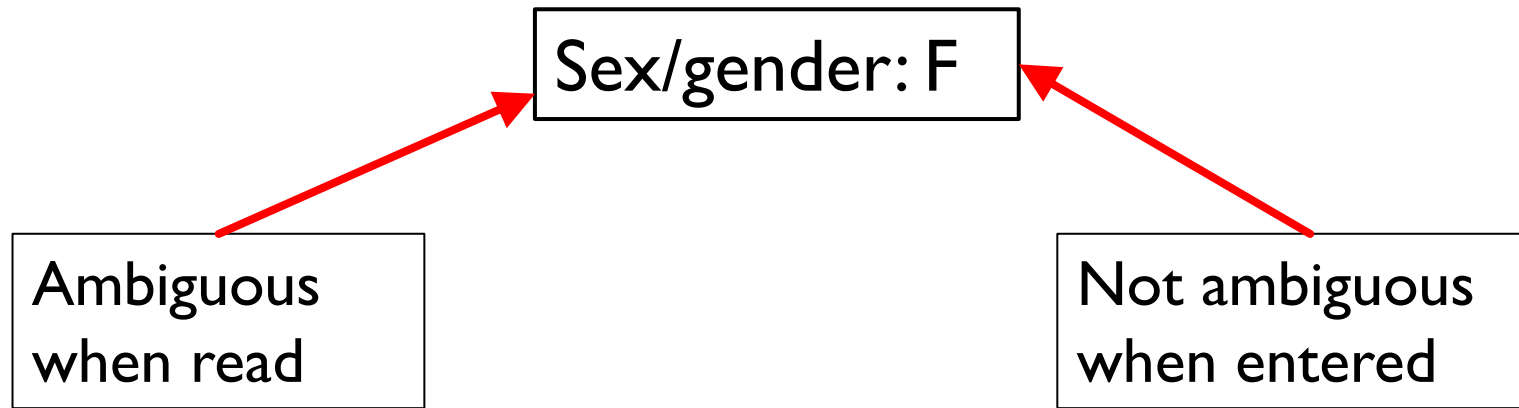
- E identity ICE

# Discussion

- Informational entities about intersex and non-binary gender
- *Biological sex or gender identity ICE* class as a catch-all solution
- Rejected alternative: *Ambiguous Biological sex or gender identity ICE*

# Discussion

- Rejected alternative: *Ambiguous Biological sex or gender identity ICE*



# Discussion

- Created for medical records but could be useful elsewhere
- Future works on aboutness in order to link these classes to non-informational entities
- Ethical implications as sex and gender are sensitive data



**Thank you**

