



World Health  
Organization

Patient Safety  
A World Alliance for Safer Health Care



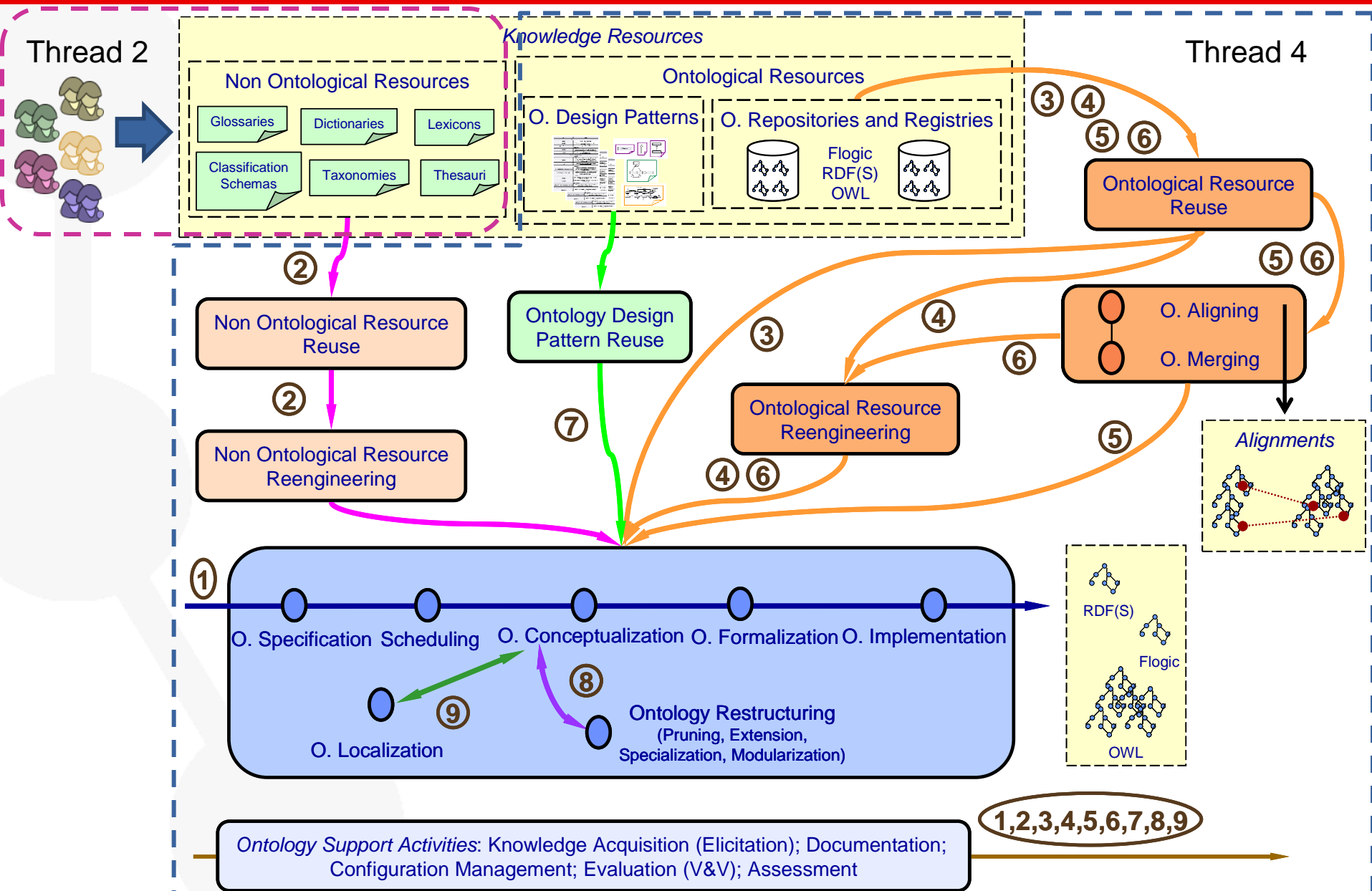
# **International Classification for Patient Safety (ICPS)**

**a Project funded by the World Alliance for Patient Safety of the World Health Organization (WHO)**

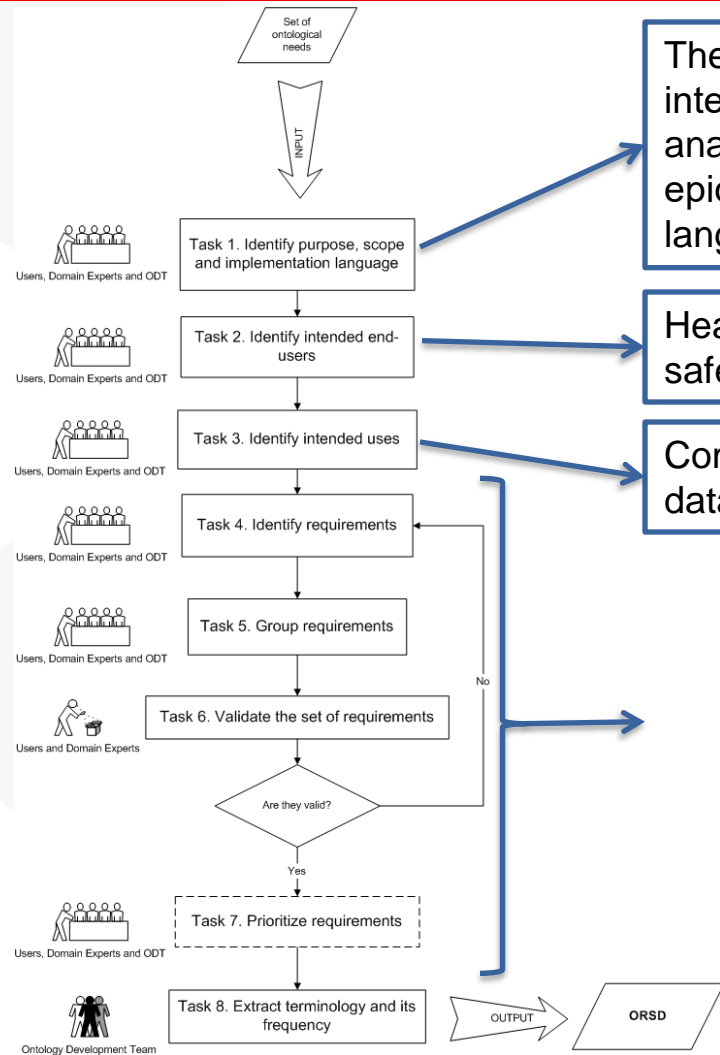
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- Objectives of the *International Classification for Patient Safety* (ICPS) Project:
  - To create a **conceptualization** of the ***patient safety*** domain to enable an efficient monitoring, analysis and interpretation of the info.
  - To enable **interoperability** with existing international classifications.
  - To improve **patient care** and health policy plans all over the world.
- Methodological background: *NeOn Methodology*
  - Focus on: ontology networks (modularity), reuse of existing resources, adaptation in the interface generation
- Initial domains for ontology development:
  - Falls & Pressure Ulcer

# Methodological Background: NeOn Methodology



# Ontology Specification Requirements



The *International Classification for Patient Safety* (ICPS) project is intended to facilitate “description, comparison, measurement, monitoring, analysis and interpretation of information to improve patient care, and for epidemiological and health policy planning purposes”. The ontology language in which the ontologies are going to be implemented is OWL.

Health care professionals, developers of patient safety reporting systems, Ministries of Health...

Comparing data, trending patient safety incident data, investigating patient safety incidents...

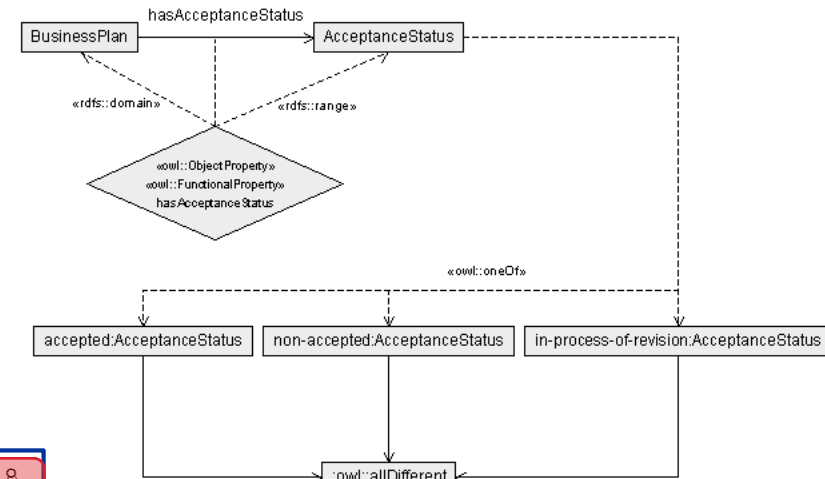
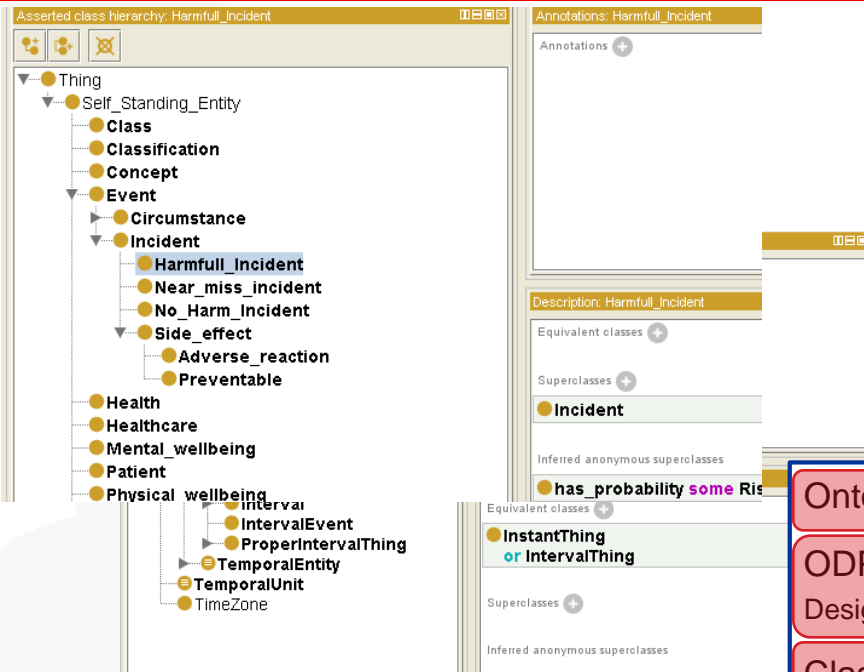
Number	Competency Questions (CQs) -Pressure Ulcer	Answers
CQ1	What is a pressure ulcer?	Type of incident
CQ2	Where was the pressure ulcer detected?	Community Care Facility; Hospital
CQ3	Which are the types of facilities?	Community Care Facility; Hospital
CQ4	When was the pressure ulcer detected in the Community Care Facility?	Before commencing care (in a Community Care Facility); after cor
CQ5	When was the pressure ulcer detected?	on admission to hospital; during stay in hospital
CQ6	Where is the pressure ulcer detected?	head; neck; trunk; limbs
CQ7	In which parts is the head divided?	Scalp; ear; face
CQ8	Which are the parts of the face?	eye; nose; lip; mouth; chin
CQ9	Which are the parts of the trunk?	shoulder area; chest; scapula; breast; abdominal area; back (uppe
CQ10	Which are the types of limbs?	arms and legs
CQ11	Which are the parts of the arm?	upper arm; elbow; forearm; wrist; hand
CQ12	In which parts is the hand divided?	digits; back of the hand; palm
CQ13	Which are the parts of the leg?	thigh; knee; lower leg
CQ14	Which are the parts of the thigh?	upper thigh and lower thigh
CQ15	Which are the parts of the knee?	back of the knee; front of the knee; lateral inner aspect; lateral out
CQ16	In which parts is the lower leg divided?	ankle; calf; shin
CQ17	Which are the parts of the ankle?	lateral aspect; medial aspect
CQ18	Which are the parts of the foot?	heel; sole; toe and top
CQ19	Which are the stages a pressure ulcer can go through?	stage 1; stage 2; stage 3; stage 4; unstageable; Suspected Deep
CQ20	How many stages did the pressure ulcer advanced during the patients stay?	

[Suárez-Figueroa, et al., 2007]



M.C. Suárez-Figueroa, G. Aguado de Cea, C. Buil, K. Dellschaft, M. Fernández-López, A. García, A. Gómez-Pérez, G. Herrero, E. Montiel-Ponsoda, M. Sabou, B. Villazon-Terrazas, Z. Yufei. *NeOn D5.4.1: NeOn Methodology for Building Contextualized Ontology Networks*. NeOn project. <http://www.neon-project.org>. February 2008.

# Candidate Reusable Resources



## Logical Pattern Specified Values: Set of Individuals

### Trip/stumble

Defined as [ICP S Fall](#) > Mechanism of the fall  
Sourced from [AIMS](#)



Synonyms:  
none



ICD  
Version 2007

### Descriptions:

Source - AIMS - Set  
tripped over bed linen  
same as Invariant  
same as English  
same as Invariant  
same as Spanish

### Details:

none

### List of Chapters

Chapter Introduction

List of Blocks

Previous Block

Next Block

### Chapter I

Certain infectious and parasitic diseases  
(A00-B99)

Viral hepatitis  
(B15-B19)

Excludes: cytomegaloviral hepatitis (B25.1)  
herpesviral [herpes simplex] hepatitis (B00.8)  
sequelae of viral hepatitis (B94.2)

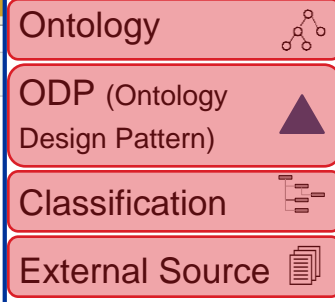
B15 Acute hepatitis A  
B15.0 Hepatitis A with hepatic coma  
B15.9 Hepatitis A without hepatic coma  
Hepatitis A (acute)(viral) NOS

B16 Acute hepatitis B  
B16.0 Acute hepatitis B with delta-agent (coinfection) with hepatic coma  
B16.1 Acute hepatitis B with delta-agent (coinfection) without hepatic coma  
B16.2 Acute hepatitis B without delta-agent with hepatic coma  
B16.9 Acute hepatitis B without delta-agent and without hepatic coma  
Hepatitis B (acute)(viral) NOS

## ICECI

### M1 - MECHANISM OF INJURY—SHORT VERSION: LIST OF CODES

1	Blunt force
1.1	Transport injury event: motor vehicle occupant
	Equivalent categories: Item C2 1.1.1
1.2	Transport injury event: pedestrian
	Equivalent categories: Item C2 1.1.2
1.3	Transport injury event: pedal cyclist
	Equivalent categories: Item C2 1.1.3
1.4	Transport injury event: motorcyclist
	Equivalent categories: Item C2 1.1.4
1.5	Transport injury event: other & unspecified event
	Equivalent categories: Item C2 1.1.8, 1.1.9
1.6	Falling, stumbling, jumping, pushed
	Equivalent categories: Item C2 1.5n



## 2. Pyramid of reusable/usable ontologies

- Identify main concepts and domains
- Identify main relationships
- Identify possible resources to reuse
  - Ontological Resources
  - Non Ontological Resources
  - Ontology Design Patterns



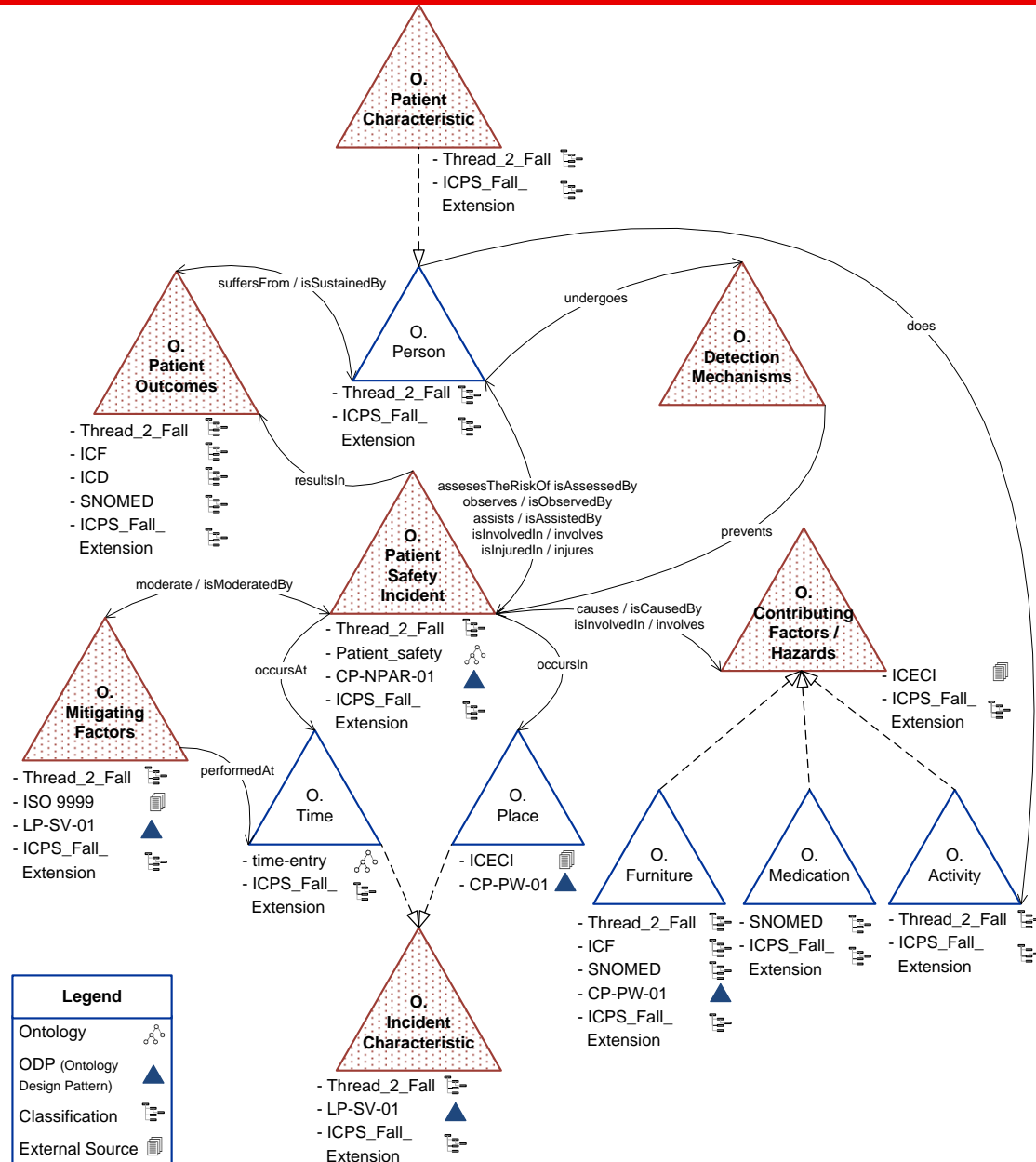
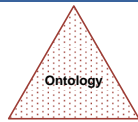
- Identify taxonomies and main concepts within domains
- Identify binary and n-ary relationships
- Identify mereologies



# Ontology Conceptualization (II)

**Falls** Ontology Upper Level Conceptual Model

Aligned with the ICPS framework

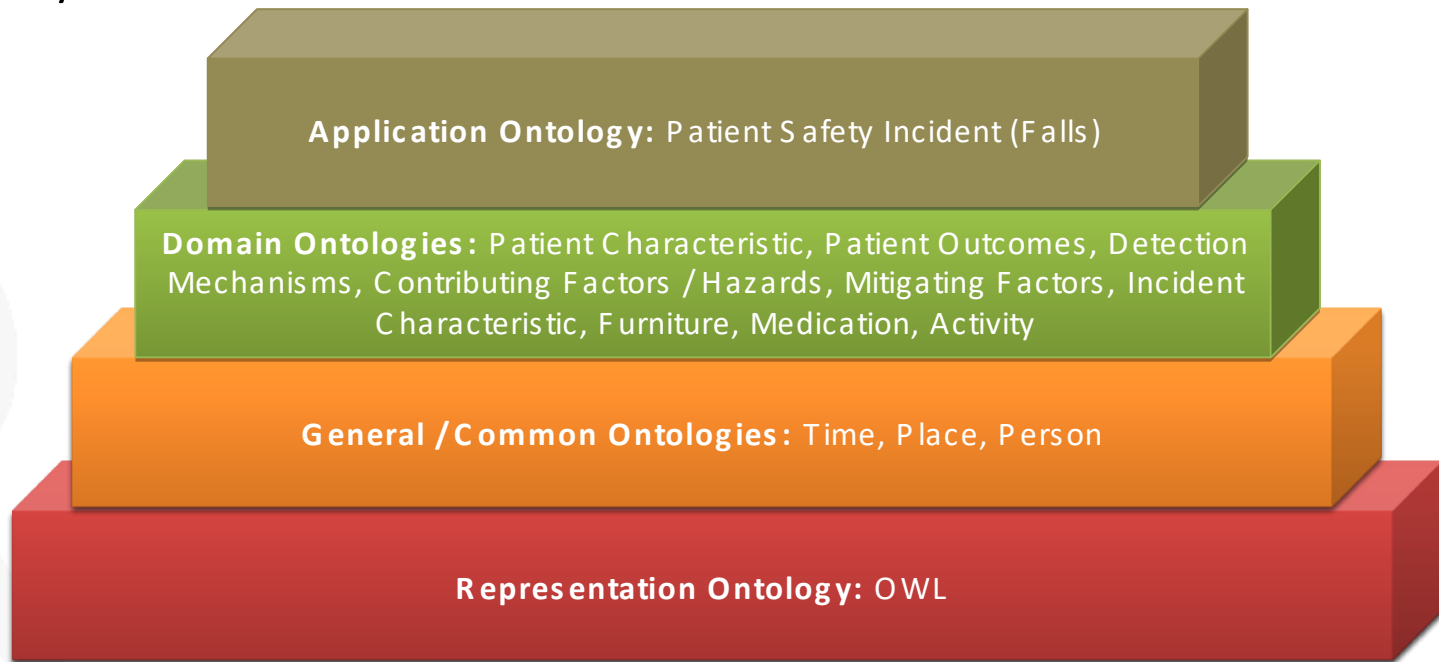


# Ontology Conceptualization (IV)

## Falls Ontology Pyramid

Reusability

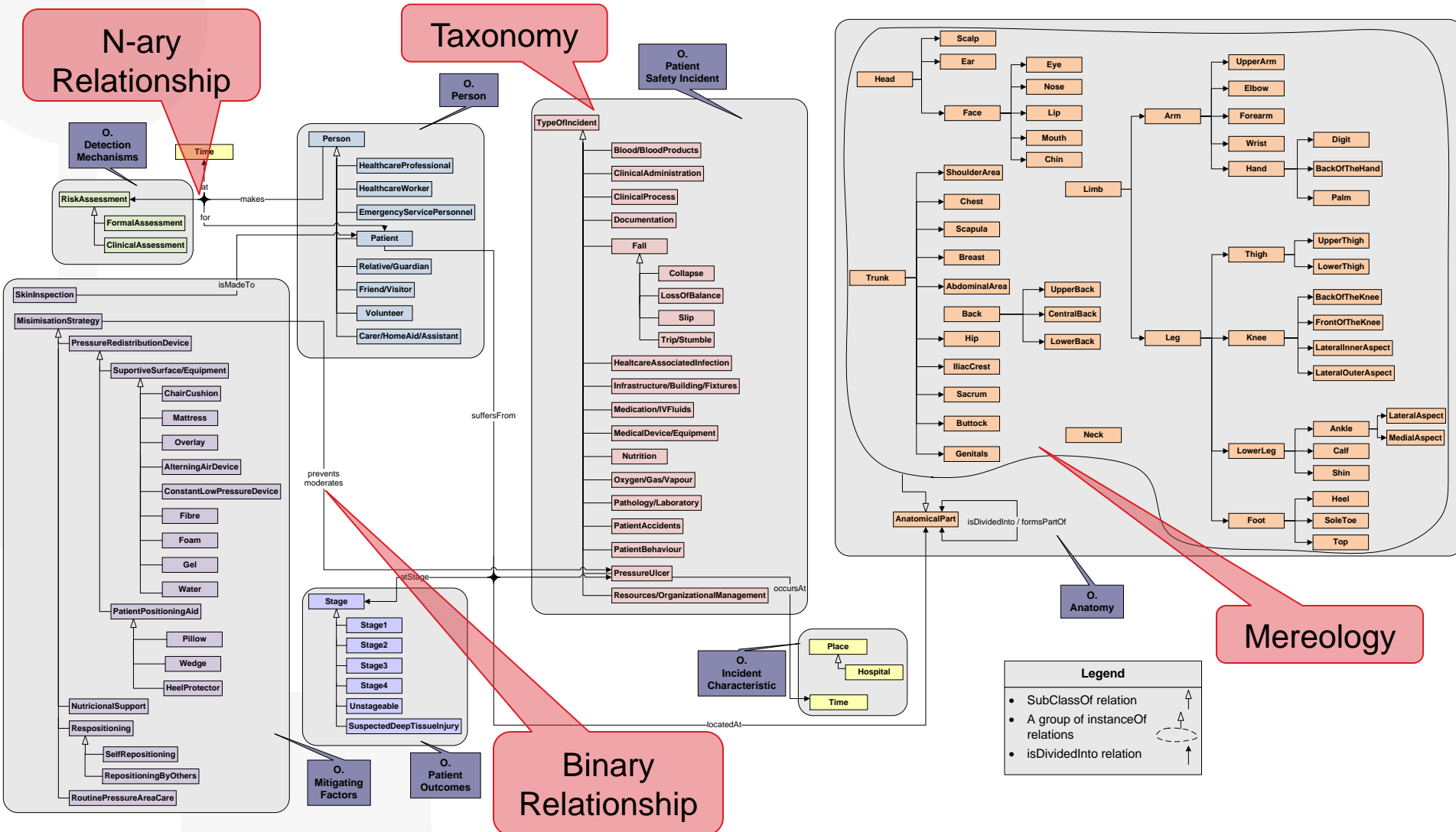
Usability





# Ontology Conceptualization (V)

## Pressure Ulcer Ontology Detailed Conceptual Model





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