

## 4.7 Description Logic Features

SNOMED CT concepts are modelled in such a way that their meaning can be represented using a formal family of logics called Description Logic (DL). Description logic enables computers to make inferences about the concepts in SNOMED CT and their meanings, and to classify SNOMED CT using a DL reasoner. Description logic also allows the formal computation of:

- Subsumption – Testing pairs of expressions to see whether one is a subtype of the other
- Equivalence – Testing pairs of expressions to see whether they have the same logic-based meaning

Subsumption and equivalence are both extremely useful functions when retrieving or querying clinical information. For example, when retrieving all clinical records related to 73211009 [diabetes mellitus], it would usually be necessary to retrieve records referring to any subtype of this concept, such as 23045005 [insulin dependent diabetes mellitus type 1A].