INTERNATIONAL HEALTH TERMINOLOGY
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# Lessons Learned from the Development & Use of Intensional Value Sets

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## Audience

Groups interested in this presentation will be those who require the use of intensional value sets (aka subsets) within their application or system.

## Objectives

To demonstrate how intensional value sets were developed for use by Canada Health Infoway.

To discuss the successes and challenges when rule based value sets using SNOMED CT.

## Abstract

Value sets facilitate semantic interoperability for systems by implementing agreed upon values using reference terminologies such as SNOMED CT to use for capturing patient data in various domains such as laboratory, medication, imaging, administrative, and clinical. There are two types of value sets; intensional and extensional[1]. Intensional value sets are defined by computable expressions that can be resolved to give an exact list of codes. For example, a value set may have a rule that states "include all concepts from the SNOMED CT finding hierarchy and then exclude all non-human concepts". Extensional value sets are enumerated as an exact list of codes.

Canada Health Infoway developed a set of 33 SNOMED CT intensional value sets which are used to support interoperability. Examples of these are "Act Care Provision Request Type", "Act Professional Service" and "Diagnosis Value". These have recently been re-evaluated for clinical purpose and pertinence. The HL7 (now outdated) Terminfo document was used for reference.

There were several challenges during the development of the value sets. It was difficult to obtain a succinct subset for specific types – e.g. symptoms, interventions. Some of the value sets had members that came from multiple domains and include numerous exclusion criteria. There are not clear SNOMED CT guidelines for the development of intensional value sets.

The successes achieved from the creation of the intensional value sets are they can be used as "foundation" subsets. Also, some value sets are simpler to define, such as "Medical device type" because the rule calls children from a fewer number of domains.

## References

1. International. Domain and Value Sets Binding 2012. [Cited 2013 Feb 29]; Available from http://wiki.hl7.org/index.php?title=Domain_and_Value_Set_Definitions_and_Binding#Introduction_2.