Content Development Document (Fast track)
Acquired <finding or disorder>

JIRA ID: PCP-71

Release used for analysis:

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<thead>
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<th>Status</th>
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<tbody>
<tr>
<td>Version</td>
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<td>Date</td>
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1. Content Issue Summary
   a. Summary of issue
      There are 690 "Acquired X" disorders in SNOMED CT. The vast majority are primitive. Additional requests for "acquired" disorders are being received to specifically distinguish them from congenital forms of the same disorder. There is currently no guidance on how to represent these terms in a fully defined way, leading to substantial manual editing work and incomplete/incorrect classification.
   b. Related content projects and requests

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<th>Related Issues</th>
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<td>GC-112</td>
<td>Acquired neutrophilia</td>
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2. Analysis of Issue
   1. There are existing "Acquired X (morphologic abnormality)" concepts, which have been used to model some "Acquired X" concepts, but these are very much analogous to the "Congenital X" morphologies that we are trying hard to get rid of.
   2. "Acquired" and "Congenital" are not morphologies, but timeframes. We currently do not have a way of denoting "All periods of life after birth" like we do for "Congenital". Creating a satisfactory representation for all periods of life after birth would enable the full definition of "Acquired X" concepts, with some caveats around genetic/hereditary disorders for which the inciting cause is present at birth, but does not manifest until later in life.
Using this approach might open the door that all disorders that are not specifically “Congenital” have an OCCURRENCE relationship, making that relationship “required”, which seems to be “overmodeling”. It would also potentially eliminate the unspecified form of the concept (i.e. no OCCURRENCE attribute) as those could be viewed as ambiguous.

While we can currently use “Acquired deformity” morphology concepts, due to the lack of many useful subtypes of “Acquired X” morphologies, it would only be a partial solution.

Creation of new “Acquired X (morphologic abnormality)” concepts would mimic the type of concepts we are trying to inactivate in the Congenital space. However, the current guidance related to “Congenital” is not totally correct, because there are many conditions that can ONLY be congenital, even if the FSN does not state it (For example, aplasias or supernumerary structures). So the guidance does need to be updated.

3. Additional issues identified

1. There are some types of findings and disorders that are ONLY acquired. What would be the criteria for either including or not including these in the requirement for the addition of an OCCURRENCE relationship?
2. There is a distinction between “hereditary” and “congenital”, which are often conflated in disease naming. Some hereditary diseases often manifest later in life. Would these be considered “acquired”? The challenge is how to represent the acquisition of the trait as opposed to the clinical manifestation of the trait.
3. What do we mean when we say “acquired”?

4. Solution

The following definitions for acquired disorders were found:

- Not inherited, or present at birth (congenital), but developing after birth.
- Developed or originating after birth, not congenital or hereditary
- Incurred as a result of factors acting from or originating outside the organism; not inherited.
- Resulting from exposure to something, such as an antigen or antibiotic.
- Pertaining to a characteristic, condition, or disease originating after birth, not caused by hereditary or developmental factors but by a reaction to environmental influences outside of the organism.
- Incurred as a result of factors acting from or originating outside the organism; not inherited.

Given the consistency in the definition relating specifically to the temporal aspects of the disorder as well as the non-genetic origin, the use of a period of life grouper term that encompasses all periods of life after birth. While there may be some “fuzziness” when determining whether a neonatal disorder is acquired or not, the key differentiating factor is the knowledge of a genetic component. This may cause some issues with the definition of a number of “Congenital infections”, the majority of which are acquired during development and have no genetic or hereditary component. However, given that the definitions above specify “after birth”, this too can be used as a discriminating factor in the determination of whether a disorder is acquired.

There are three alternatives to resolve this issue:

1. Create an intermediate primitive grouper - “Acquired disorder” that as a proximal primitive parent would allow subtypes to be fully defined under. These would also classify under the appropriate parent term related to the disorder.
2. Create a “period of life” subtype that includes all periods except “fetal, congenital, and neonatal (substantial testing of impacts would be needed)
3. Create a set of “Acquired X (morphologic abnormalities)” to support definition of acquired disorders.

The EAG came to consensus that the most expedient way to address this issue given the current state of the concept model was to create a new qualifier value of "Post-natal" to aggregate the periods of life that would be used to define “Acquired” conditions.

At the EAG meeting in Bratislava, there were a number of concerns about this proposed solution:

1. The carte blanche application of the OCCURRENCE attribute to all findings and disorders was not viewed as a beneficial application of this solution. It was suggested that its use be limited to only those findings and disorders where the FSN specifies "acquired", or where the need to specify that both congenital and acquired forms of a disorder occur.
2. As to the genetic diseases that manifest later in life, editorial guidance to ensure that the genetic/hereditary be a part of the stated model would need to be tested to ensure that these do not classify as acquired disorders.
3. Is there any advantage of having the top level grouper of “Acquired X”, given that it can be fully defined with the OCCURRENCE relationship?

It was agreed that testing of this proposal would be needed prior to full implementation.

5. Construction

The following steps were taken:

1. Create new concept "Postnatal period (qualifier value) with parent of 282032007 "Periods of life".
2. Move the following concepts under "Postnatal period":
   a. Adolescence
   b. Adulthood
3. Remodel “Acquired disorders” to proximal primitive parent, adding OCCURRENCE = “Postnatal period” to the relationship group.

Initial tests were performed using “Acquired deformity

6. Transition phase

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7. Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
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<tr>
<td>Acquired disease</td>
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