

SNOMED CT International Edition: Process for updating a National Extension

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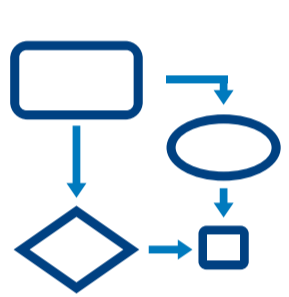
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Background

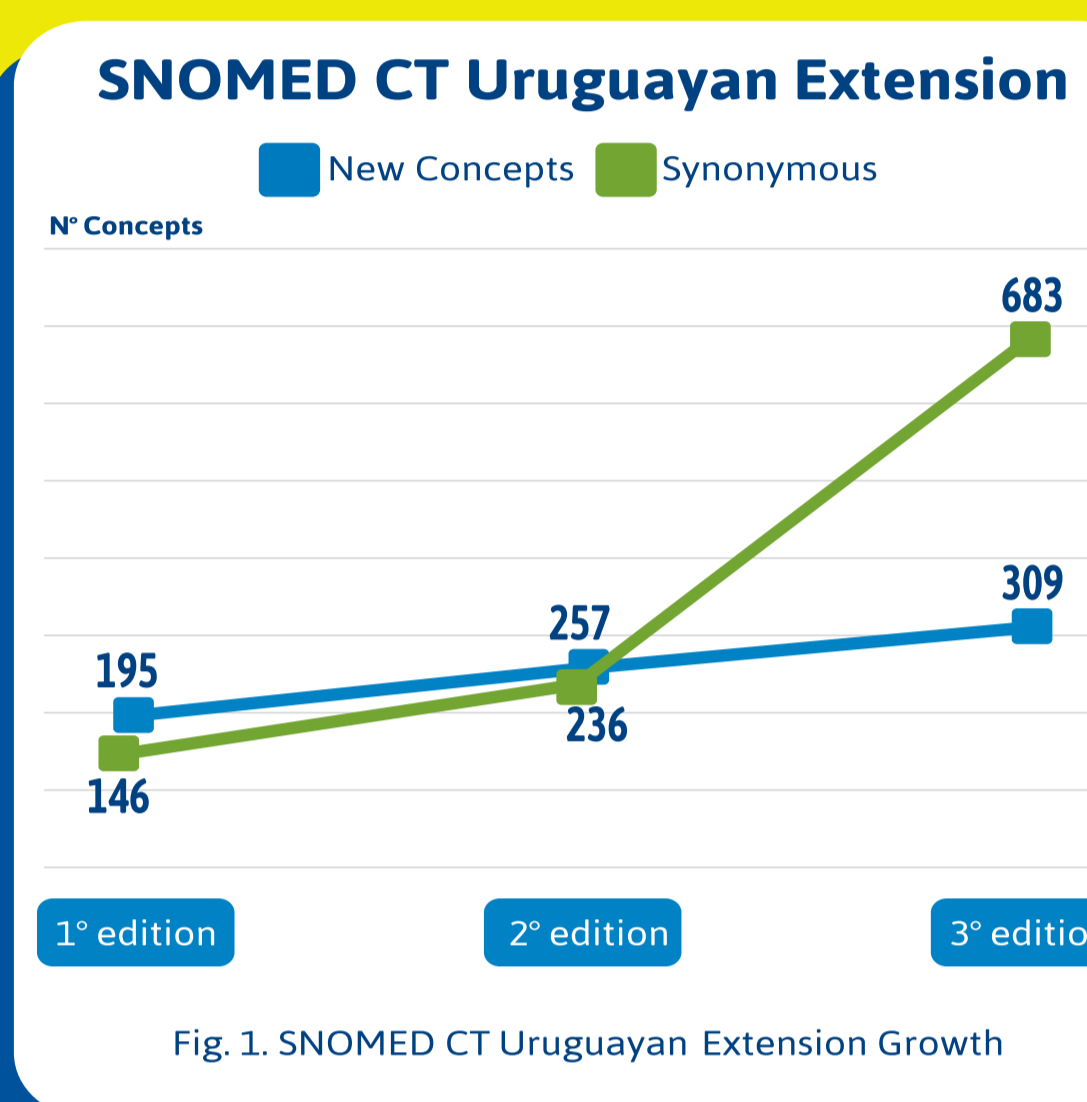
Objective

To describe the process of updating the Uruguayan National Extension identifying procedures to align its content with new versions and changes on the SNOMED CT International Edition.



Methods

To develop the procedures for updating process the tools used were: the Description Logic (DL) Classifier results and the integrated Quality Assurance (QA) Rules provided on the extension authoring tool – TermSpace. These patterns are checked for the authoring baseline created for our releases, starting with the previous version of the Uruguayan Extension, and the dependencies for the next Uruguayan Extension Release, the January 2016 International Edition and the April 2016 Spanish Edition.



The SNOMED CT Uruguayan Extension depends on the Spanish Edition, which is the authorized translation of the International Edition. Changes in the International Edition as well as the Spanish Edition have a direct impact in the release of the Uruguayan Extension and its content previously published. Therefore, it was necessary to apply processes and methods in order to align with the new and updated international content, identifying relevant change events and their impact on the extension content.

This process will be performed for each new release of the Uruguayan Extension in order to identify and resolve any issues created or changed by the International Edition.

The first edition of the Extension was published in August 2015, with the creation of 185 concepts and 146 lexical localization. The creation of new concepts was performed in a continuous basis, whereas the last release was more focused on the localization of concepts by adding local descriptions to enhance SNOMED CT adoption, maintain the same pace in the creation of new concepts (Fig.1).

Change management process

Concept duplications

- **05 Equivalent concepts:** concepts with the same logical definitions. Detected by the DL Classifier.
- **11 Lexical duplications:** concepts with the same fully specified name. Detected by QA rules.
- **02 Hidden duplications:** concepts with different concept definitions and FSNs. The only option to detect these duplications is manual review of the new content added to the release.



Resolution:

The concept in the Extension is inactivated and a historical association is created pointing to the correct concept in the International Edition. If the concept is a member of any extension reference set or referenced by any relationship, the concept is replaced by the new International edition concept.

References to inactive components:

- **Inactive references in the dialect language reference set**
Inactive descriptions that have active references on the extension language reference set. Detected by QA Rules.
- **Inactive reference set members**
A recently inactivated concept in the International Edition is an active member of an extension reference set. Detected by QA rules.
- **Inactive targets in relationships**
Recently inactivated International Edition concepts used as destinations of active relationships on the extension produce violations of the Machine Readable Concept Model (MRCM). Inactive concepts are not in the allowed range of any SNOMED CT attribute. Detected by QA rules that enforce the MRCM.



Resolution: The language reference is inactivated and a new description is created or linked from the International Edition.

Resolution: The reference set member is replaced or removed.

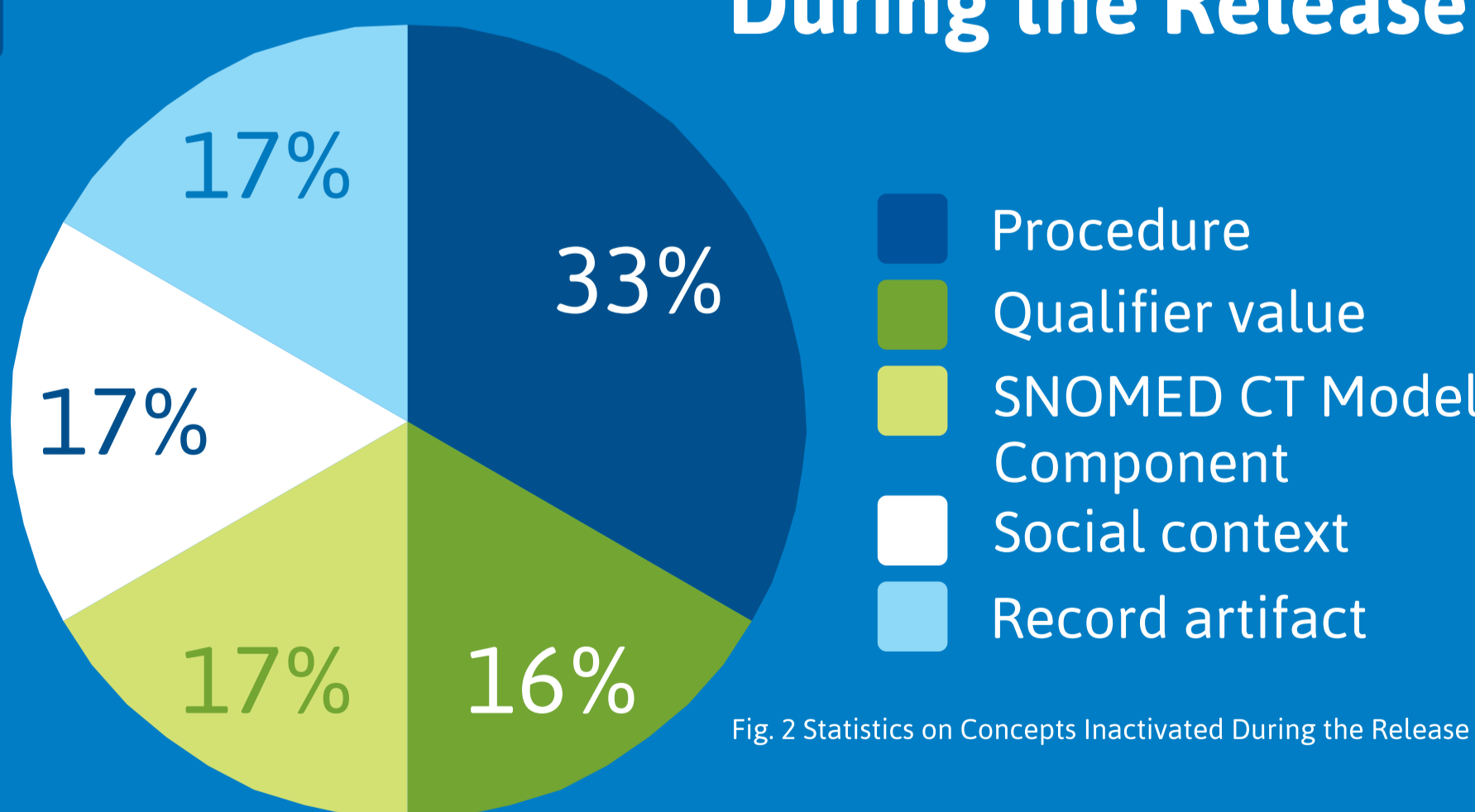
Resolution: A new destination is selected to replace the inactive concept.

Concepts promoted by the international edition

For the next release, the relationships presented on the extension, were reported by QA rules as incorrect relationships, as an extension is not allowed to add local relationships to an International Edition concept. The extension relationships were inactivated. As the descriptions in the Uruguayan Extension are included in a different language reference set, all the existing description remain as valid local descriptions for the concept.

23 concepts created for the Uruguayan Extension were submitted and accepted for inclusion on the International Edition. When accepted by the IHTSDO, a new version of the concept was created on the International Edition with the same concept ID and International Edition module.

Statistics on Concepts Inactivated During the Release



Conclusion

After the analysis done, we find that to analyze duplication and inactivated concepts is cost effective, and contributes to the alignment with the international version, maintaining the currency of the created concepts which were adopted. By tracing the concepts, it is possible to obtain good statistics of the concepts that have changed.

Due to its dependency to both, the international English Edition and the Spanish versions, SNOMED CT National Extension can not be updated at the same time. A gap of near 5 months are necessary for our release to be synchronized with the updated international content. This means that once the National Extension Release is finished and its content is updated with both international versions, there is a gap before the next international version comes up with new concepts, lexical localization and inactivated concepts that will affect the National Extension which was recently published, making it difficult to line up with the changes.

