Emtree 2022.03 release notes

General improvements

The developments on COVID-19 retains our special attention, more detail can be found below.

Diseases

683 disease concepts have been added, including those from below mentioned workstreams:

As a part of long-term project "neoplasm" branch Emtree taxonomy improvement the work on "neoplasms subdivided by anatomical site" is ongoing. The following changes were done recently:

-   Revision and expansion of "digestive system tumor" branch. As a part of Emtree taxonomy improvement "digestive system tumor" expanded from 5 NTs with 235 diseases in Emtree 2021.02 to 6 NTs with 580 diseases in Emtree 2021.03, hierarchy levels were improved (345 new concepts were added to this branch, incorrectly assigned altlabels transferred/new concepts created)
-   Revision and expansion of "endocrine tumor" branch. As a part of Emtree taxonomy improvement "endocrine tumor" expanded from 11 NTs with 180 diseases in Emtree 2021.02 to 12 NTs with 415 diseases in Emtree 2021.03, hierarchy levels were improved (235 new concepts were added to this branch, incorrectly assigned altlabels transferred/new concepts created)
-   Revision and expansion of "urinary tract tumor" branch. As a part of Emtree taxonomy improvement "urinary tract tumor" expanded from 6 NTs with 53 diseases in Emtree 2021.02 to 7 NTs with 158 diseases in Emtree 2021.03, hierarchy levels were improved (103 new concepts were added to this branch, incorrectly assigned altlabels transferred/new concepts created). "urinary tract tumor" is a part of "urogenital tract tumor" branch, the latter will be finished in the next release.

12 new concepts added to 'experimental disease' branch, of which:

-   6 under 'experimental cardiovascular disease' branch
-   2 under 'experimental infection' branch

16 new concepts added to 'intoxication' branch, consisting mainly of various metal poisonings

Some revision of the 'autoimmune disease' hierarchy and addition of 15 new concepts

Addition of 10 new 'glaucoma'-, 7 new 'apraxia'- and 9 new 'tooth disease'-related concepts

Revision of 'impulse control disorder' branch and addition of 11 new concepts

Addition of 9 new concepts to 'abnormal respiratory sound' branch

Revision of 'tissue adhesion' branch and addition of 10 new concepts

Drugs and chemicals

Updates regarding all sources that are routinely monitored have been provided.

- The United States Adopted Names published from March 2022 until June 2022 (included) were incorporated.
- Names of newly approved drugs, drugs under consideration, orphan drug assignments and drug trade names as published by the FDA, EMA and MHRA in the period February 2022 - May 2022 (included) were incorporated.
- The content of list 127 - COVID-19 special edition (published on 09/05/2022) of proposed INNs as published by the WHO was incorporated (1 entry).

Additional COVID-19 related updates have been provided.

- Data on COVID-19 related clinical trials as published on ClinicalTrials.gov (database of privately and publicly funded clinical studies conducted around the world, supplied by the US National Library of Medicine) until June 2022 was used to identify relevant new COVID-19/SARS-CoV-2 concepts or additional synonyms for addition within the regular editorial guidelines.
- Taxonomy data on COVID-19 vaccines was updated with (WHO or nationally) approved vaccines and new trade names etc.
- Data on drugs under consideration or approved by the FDA, EMA and WHO to treat COVID-19/SARS-CoV-2 infection was monitored and updated up until mid-March 2022.

In total, 91 new concepts were added.

Medical devices

- 10 new device concepts were added to improve the (medical) device branch within Emtree: 'electroporation therapy system' (a distinction has been made with 'electroporation transfection system'), 'ligament graft', 'plasma thawing device', 'electrical impedance tomograph', 'intrahepatic portosystemic stent', 'general software', 'artificial intelligence software', 'machine learning software'.
  Concepts 'implantable artificial kidney', wearable artificial kidney', were added as narrower term of 'artificial kidney' to improve the coverage regarding artificial kidneys. Device tradenames that were present as alternative labels of 'artificial kidney' were redistributed to more suitable concepts ('hollow fiber artificial kidney' for the modern devices).
- A hierarchical improvement was made for software concepts to better reflect their status as (medical) devices. This includes a change in hierarchy and addition of concepts ('general software', 'artificial intelligence software', 'machine learning software').
  Existing concepts 'client server application', 'communication software', 'computer virus', 'data analysis software', 'electronic spreadsheet', 'telnet', 'web browser', 'mobile application', 'database management system', 'malware', 'ransomware', 'open source software', 'proprietary software' were newly added as devices.
- The preferred labels of 'nuclear magnetic resonance scanner' and 'computed tomography scanner' have been changed to 'MRI scanner' and 'CT scanner' respectively, matching the general use of these terms in literature. In accordance 'CT scanner software' and 'MRI scanner software' have become the preferred labels of their concepts.
- 557 new alternative labels have been added to the medical device branch of Emtree.
- Of these 557 new alternative labels 424 concern new device trade names. These include FDA's recently approved devices until the date of editorial freeze. Most of the new trade name labels have been acquired from the websites of their corresponding manufacturers. This is an ongoing effort and will be continued in future releases.

- The top level of the medical device branch (direct children of concept 'medical device') was cleaned up, trade name labels were moved to more appropriate Emtree concepts.
- Part of our maintenance efforts include the addition of GMDN (Global Medical Device Nomenclature) terms. 17 new GMDN terms have been added to existing Emtree concepts as alternative labels in this release. By improving and maintaining our coverage of GMDN terms we provide a connection with terms as used by FDA's GUDID.
- A need was identified to be able to use drug subheadings for devices where a drug is an intricate part of the device, e.g. drug eluting stents. To facilitate this, such drug-device combinations can now be found in the device branch as well as drug branch. In the case of 'drug eluting stent' the term 'drug vehicle' has been added as a broader (drug) term for this concept. This allows that when 'sirolimus eluting coronary stent' is indexed both drug and device subheadings can be linked to that drug-device combination e.g. 'adverse drug reaction' and 'device comparison'. Indexing of the relevant drug remains when relevant pharmacological aspects are mentioned. This change has been made exclusively to subset 'drug-eluting stent' and its narrower terms ('drug eluting sinus stent', 'drug eluting cardiovascular stent', 'drug eluting coronary stent', 'sirolimus eluting coronary stent', 'everolimus eluting coronary stent', 'zotarolimus eluting coronary stent', 'paclitaxel eluting coronary stent', 'biolimus eluting coronary stent', 'drug eluting digestive stent', 'drug eluting tracheobronchial stent', 'drug eluting ureter stent', 'triclosan eluting ureter stent', 'drug eluting urethral stent', 'drug eluting nitinol stent'). More subsets will follow in subsequent Emtree releases.

Chemical phenomena

Addition of 17 new concepts, including 10 concepts in new branchlet 'water splitting'

Biological function

Addition of 46 new 'reflex'-related concepts, and some revision of 'reflex' branch hierarchy

Anatomy

32 new concepts added to 'anatomical concepts' branch, of which:

- 7 under 'animal structures' branch
- 20 under 'heart' branch

Organisms

101 new concepts have been added to 'organisms' branch, of which:

- 79 SARS-CoV-2 related strains, isolates and pseudoviruses, including the new Omicron variants BA.1, BA.4, BA.5 and Centaurus

Parameters

191 new concepts added to 'parameters' branch, of which:

- 99 under 'anthropometric parameters' branch
- 28 under 'physical parameters' branch
- 12 under 'analytical parameters' branch
- 16 under 'cardiovascular parameters' branch
- 16 under 'visual system parameters' branch
- 9 under 'cellular parameters' branch
- 7 under 'oncological parameters' branch