SNOMED CT in Estonia
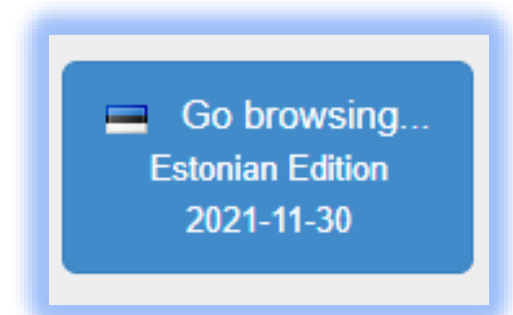
Rutt Lindström

SNOMED CT Estonian NRC

08.12.2021

snomed.org/ee

Timeline of SNOMED CT in Estonia

- **2010**
  - Estonia becomes member of SNOMED
  - Various codes used in national e-health CDAs
- **2016-2017**
  - Pathology value sets start using SNOMED CT
  - Laboratory value sets start using SNOMED CT
- **2019**
  - Nursing value sets
  - November 2019: the first Estonian extension
- **Today**
  - 28 refsets (including ca 10 000 concepts)
  - 12 000 translations
  - 450 local concepts

Go browsing…
Estonian Edition
2021-11-30

Managing SNOMED CT in Estonia

- **NRC**: Health and Welfare Information Systems Centre (TEHIK)
- **4 people** involved, none full-time
- **Tools and support** from SNOMED International

We also take part in **SNOMED International initiatives**:

- Specific work groups
- Tooling testing

> SNOMED International has proved to be very flexible and supportive

Use of SNOMED CT in Estonia

- **General awareness of SNOMED** in the national eHealth field is low…

- … but **on the rise** ☺
  - Secondary use of data
  - Cross-border data exchange
  - Semantic interoperability between domains

- **SNOMED is not well integrated in our terminology system**
  - Lots of silly manual work
  - Terminology server and new terminology system **coming soon**

> Managing SNOMED CT extension and implementing SNOMED is a 2 in 1 project occasionally experiencing interference.

Typical Use of SNOMED CT in Estonia

- SNOMED codes are used by all HCP information systems
- Mostly published as CSV value sets and SNOMED CT refsets

	A	B	C	D	E	F	G	H	I
1	Kood	Lühinimetus	Nimetus	Pikk nimetus (SNOMED CT FSN)	Hierarhia	Kehtivuse algus	Kehtivuse lõpp	Muutja	Staatus
2	112144000	A	A veregrupp	Blood group A (finding)	0	28.03.2019		Eesti Laborimeditsiini Ühing	1
3	112149005	B	B veregrupp	Blood group B (finding)	0	28.03.2019		Eesti Laborimeditsiini Ühing	1
4	165743006	AB	AB veregrupp	Blood group AB (finding)	0	28.03.2019		Eesti Laborimeditsiini Ühing	1
5	58460004	O	O veregrupp	Blood group O (finding)	0	28.03.2019		Eesti Laborimeditsiini Ühing	1
6	280416009	Selguseta	Selguseta	Indeterminate result (qualifier value)	0	28.03.2019	31.05.2021	Eesti Laborimeditsiini Ühing	0
7	3621000181105	Selguseta	Selguseta veregrupp	Indeterminate blood group (finding)	0	31.05.2021		Eesti Laborimeditsiini Ühing	1
8									

> It's been easy to use SNOMED without really knowing SNOMED

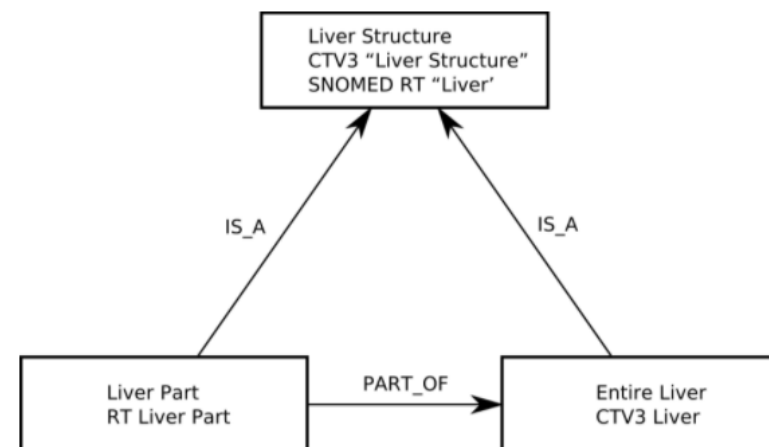# Atypical* use of SNOMED in Estonia

- **A few systems use SNOMED CT directly** (RF2 files) and use more than just national value sets

- **One big hospital system uses full SNOMED CT** (HEDA; several hospitals)
  - Setting a good example (decision support, ICD maps etc)
  - Cooperation for translating SNOMED content
  - Sharing their knowledge with implementers, HCPs and NRC

- **Strong interest for SNOMED coming from academic field**
  - Mapping to SNOMED enhances the analytic capabilities
  - Improving current eHealth system

* normal

Digging up long-hidden problems 1

- ## Wrong concepts used:
  - Grouper concepts instead of observable entities
    - Diagnosis (observable entity) vs Disease (disorder)

  - Body structure concepts:
    - Hand vs Upper limb (both *Käsi*)
    - Entire hand vs Hand structure for specimen

- ## Mixing hierarchies might conflict with MRCM
  - Qualifier values instead of HL7 NullFlavor

	A	B	C	D	E	F	G	H	I
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Digging up long-hidden problems 2

- ## Twisted translations from pre-extension era
  - [98921000119102 |Läbilöögivalu| Pain due to neoplastic disease (finding)](#) from early 2019
  - [879969009 |Breakthrough pain (finding)](#) became available in International release in Jan 2021
  - Without extension you are forced to use the closest concept available

National/local extension helps you overcome the problems without compromising interoperability

- ## Inactive concepts
  - Single concepts in CDAs not belonging to any value sets
  - Concepts used in various queries happening in the background

Housekeeping strategies needed

Translating SNOMED CT into Estonian

- **Until 2020** only concepts in national value sets were translated

- **2021:**
  - cross-border Patient Summary value sets
  - raw translations from implementers
    - Surgical procedures
    - OB-GYN
    - Substances
    - Relatives and family

- **Cooperation** with terminology experts from other projects

- So far, we haven't used special **translation software**

Translation challenges

Emergency cesarean or emergency hysterectomy?

Parents
> Cesarean hysterectomy (procedure)
> ≡ Emergency cesarean section (procedure)

≡ Emergency cesarean hysterectomy (procedure)
SCTID: 236987005

236987005 | Emergency cesarean hysterectomy (procedure) |
en Emergency cesarean hysterectomy (procedure)
en Emergency cesarean hysterectomy
en Emergency caesarean hysterectomy

- **Importance of SNOMED-awareness**
  - Need to translate concepts, not descriptions
  - Avoid duplicates
  - Provide feedback to SNOMED about mistakes
  - Basically, you need to train your own experts

- **Reviewing raw translations**
  - Very time-consuming
  - Walking on thin ice
  - But it's worth it ☺

Malstrom or Malmström?

Sünnitus Malmströmi vaakumekstraktori abil
SCTID: 90438006

90438006 | Sünnitus Malmströmi vaakumekstraktori abil |
et Sünnitus Malmströmi vaakumekstraktori abil
en Delivery by Malstrom's extraction (procedure)
en Delivery by Malstrom's extraction
en Delivery by Malstrom extraction

- **National translation guide:**
  - Important to agree on best practices
  - Impossible to decide everything beforehand (continuous improvement)

Translation plan for 2022

- **Body structure**

- **Disorders**
  - Use statistics to define the most used ICD-10 codes
  - Use mappings ICD-10 -> SNOMED CT
  - Cooperate with ICD-11 translation project

> 425 (7.9%) of the most frequent ICD codes make 90% of documented diagnoses (Reisberg *et al* 2013).

- **Procedures**
  - Use statistics to define the most used local procedure codes
  - Create map to SNOMED + translate

- **Substances**
  - Allergens and poisoning-related substances
  - No medication-related concepts

Mixing terminologies. Strategies.

- **Focus on international terminologies**
  - Unstoppable love for WHO classifications (ICD, ATC, ICF)
  - For new projects we try to prefer SNOMED CT (or ICD-11 or Orphanet or ICF or MedDRA or …)

- **SNOMED CT**
  - Create local content if needed
  - Then make it international!

- **Existing local value sets**
  - Map or re-code to SNOMED CT
  - Avoid creating more

Clinical terminology centre:
- National Institute of Health Development
- Coordinating stakeholders
- Translation of ICD-11
- Cooperation with SNOMED NRC

Summary

Challenges implementing SNOMED CT are well worth the effort!

- Covers whole life cycle for health data (from interface to research)
- Wide international use
- Multilingual
- Built-in mappings to other code systems

- Trainings and documentation for everyone
- Variety of open-source tools ([GitHub repos](#) + more)

- Works well with FHIR
- Supported by most terminology servers

- Flexibility together with long-term reliability

Thank you!

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