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Adapting SNOMED CT® For Use In Denmark. The Tools And The Process Of Concept Based Translation

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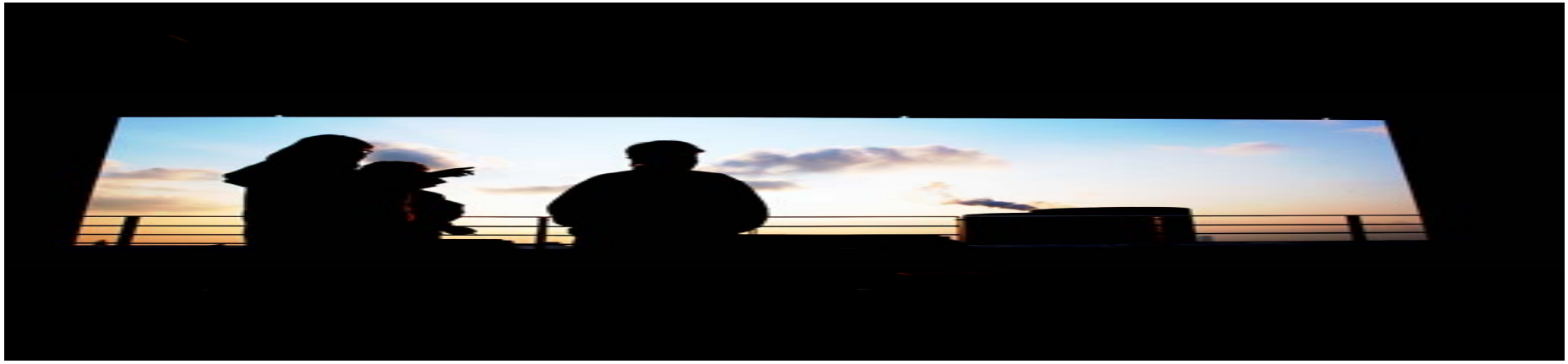

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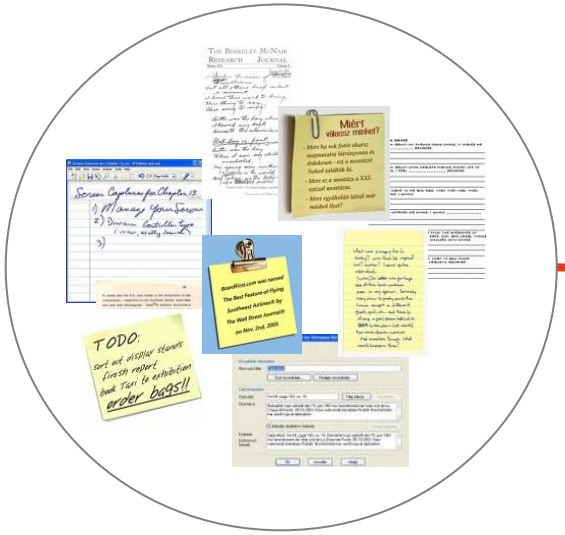
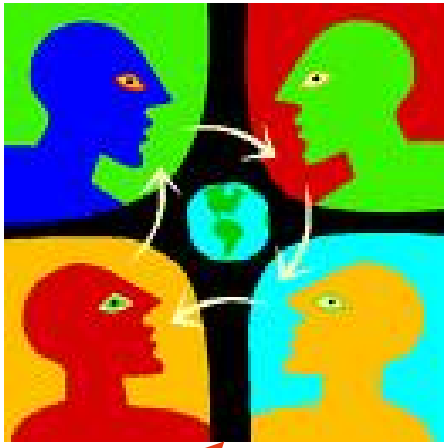
What We Need Is…

- Sharing health care information between professionals, departments and organisations – supporting improved quality, transparency and continuity throughout the whole period of care.

- Computerizing the data – making them suitable for electronic communication between different systems and in a unambiguous form, which can be read, understood and used of all professionals in the interdisciplinary team





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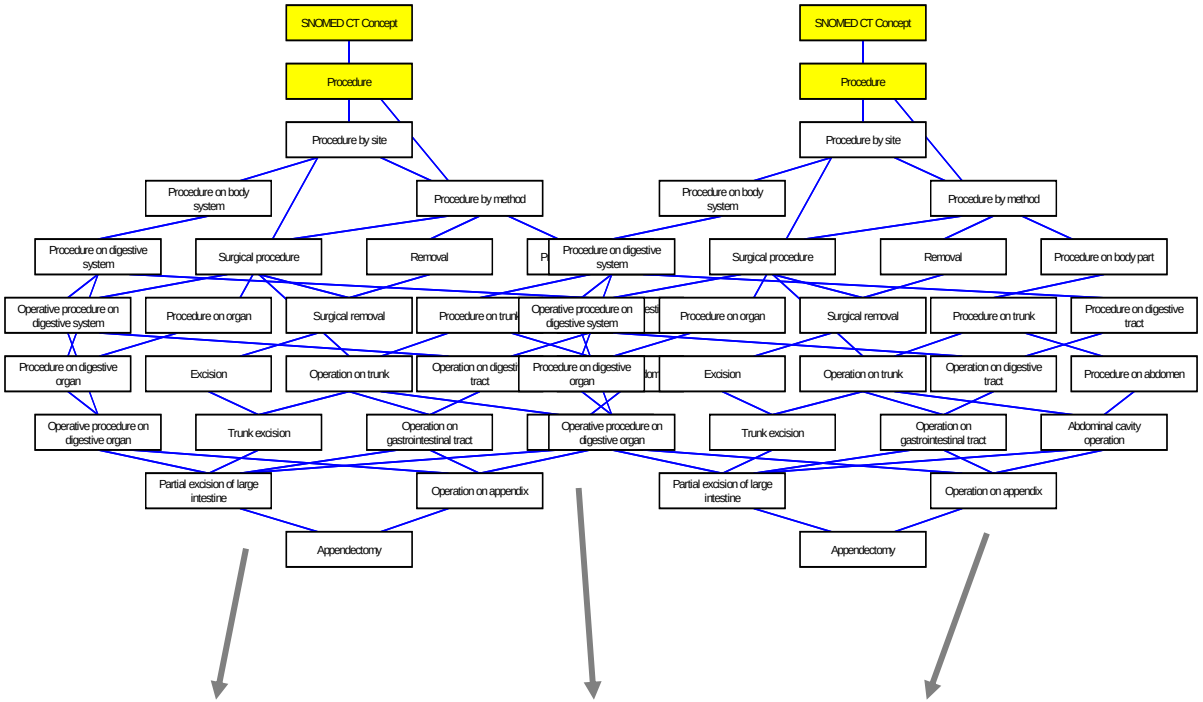
What is SNOMED CT®?

SNOMED CT® is an international, inter-disciplinary health terminology made for electronic use.

- 380,000 concepts
- 900,000 terms
- 1,400,000 relationships



Abdominal surgery

Endurance
Energy Conservation
Rest
Sleep
Activity Tolerance
Psychomotor Energy
Child Development: 2 Months
Child Development: 4 Months
Child Development: 6 Months
Child Development: 12 Months
Child Development: 2 Years
Child Development: 3 Years
Child Development: 4 Years
Child Development: Preschool
Child Development: Middle Childhood

Pain treatment

Body Mechanics Promotion
Energy Management
Exercise Promotion
Exercise Promotion: Strength Training
Exercise Promotion: Stretching
Exercise Therapy: Ambulation
Exercise Therapy: Balance
Exercise Therapy: Joint Mobility
Exercise Therapy: Muscle Control
Bowel Incontinence Care
Bowel Incontinence Care: Encopresis
Bowel Irrigation
Bowel Management
Bowel Training
Constipation/Impaction Management
Constipation/Impaction Management
Diarrhea Management

Primary care

Uoplagthed
Risiko for uoplagthed
Svækket mestring
utilstrækkelig friholdelse af luftvejene
Allergisk reaktion over for latex
risiko for allergisk reaktion over for latex
Angst
Frygt for døden
Risiko for aspiration
risiko for svækkelse af relation mellem forælder og barn/spædbarn
Autonom dysrefleks
risiko for autonom dysrefleks
forstyrret kropsopfattelse
risiko for uhensigtsmæssig ændring i legemstemperatur

Subsets of concepts can be generated for specific purposes

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Translation - Requirements

Method

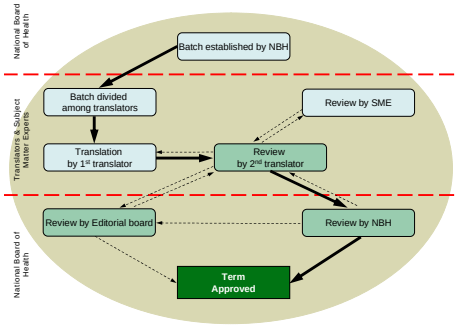
- Concept based translation
- Linguistic guidelines
- Access to Health Care literature
- Feedback loops and iterations

Competences

- Bi-lingual translators
- Subject Matter Experts
- An editorial board with terminologists and clinicians

Process

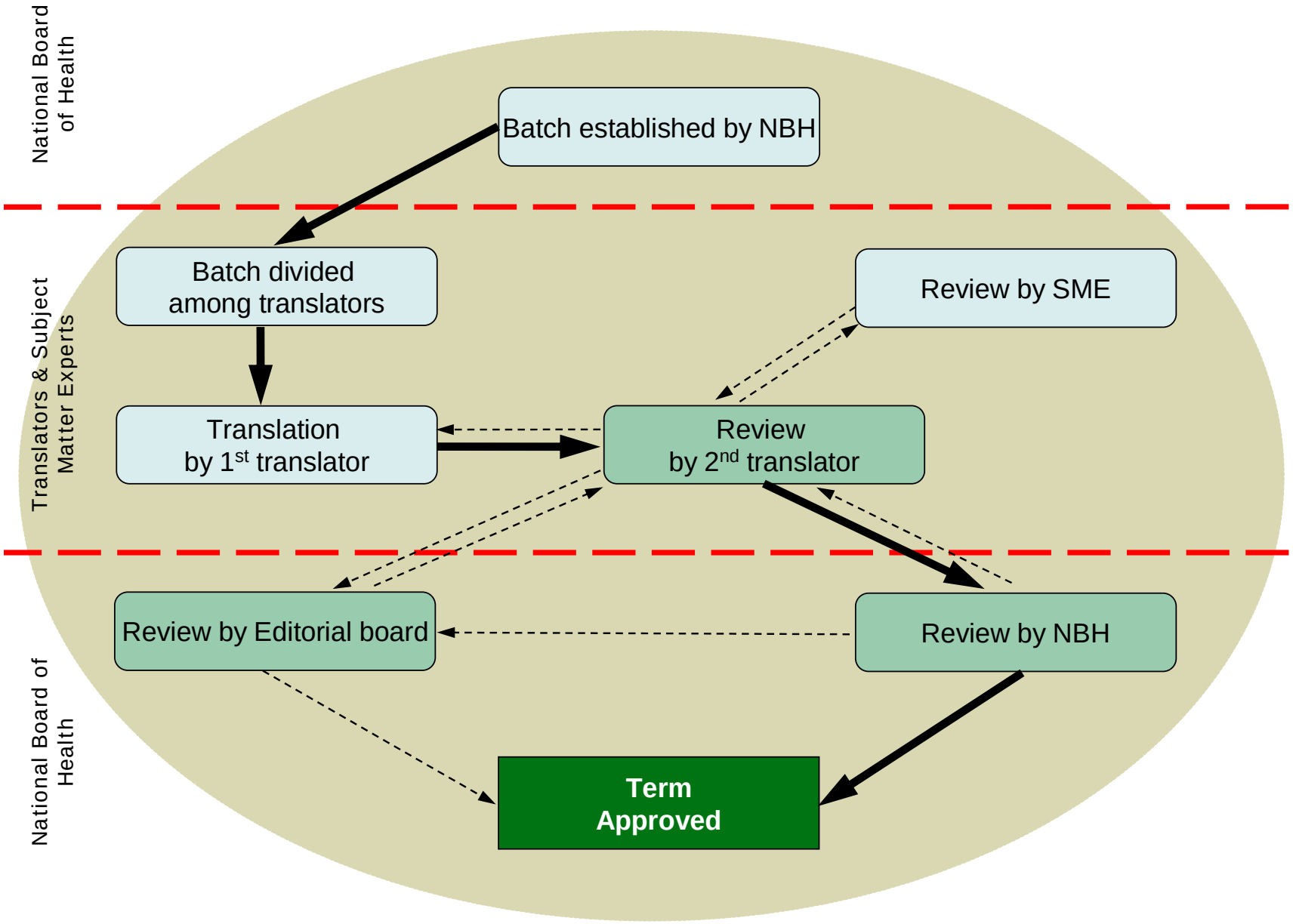
Managed workflow



Tool support

www.sundterm.dk

Translation Workflow



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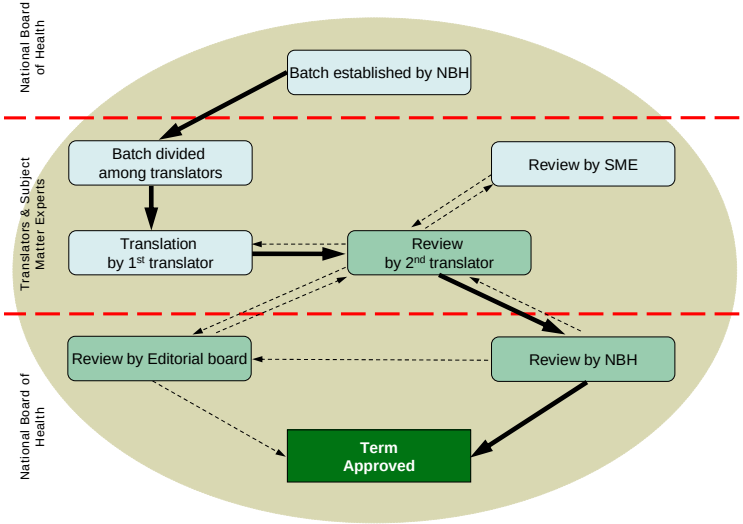
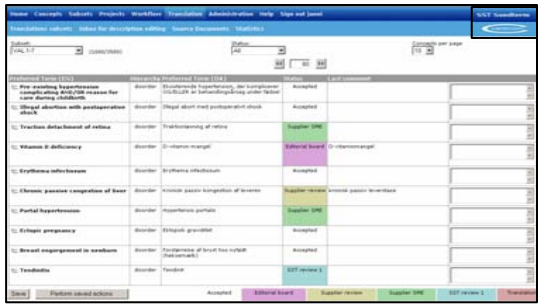
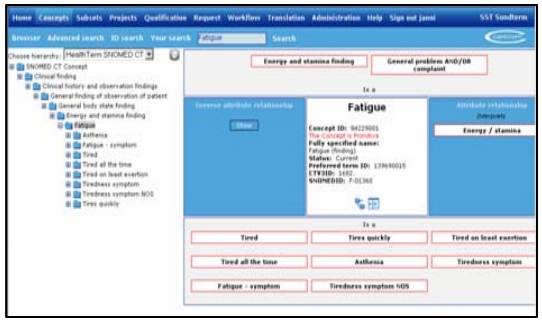
Translation Workflow

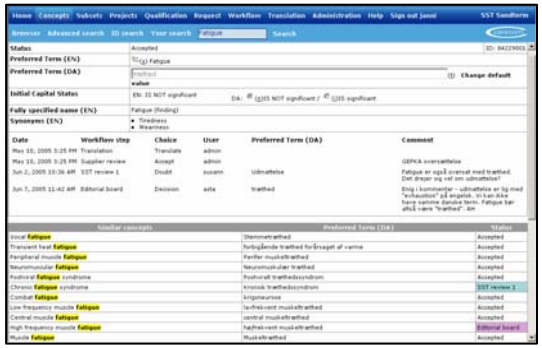




Overview, translation



Concept definition



Detail, translation

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Home | Concepts | Subsets | Projects | Workflow | Translation | Administration | Help | Sign out janni | SST Sundterm

Translations subsets | Inbox for description editing | Source Documents | Statistics | carecom

Subset: VAL 1-7 (1000/3580)

Status: All

Concepts per page: 10

<< 80 >>

Preferred Term (EN)	Hierarchy	Preferred Term (DA)	Status	Last comment
Pre-existing hypertension	disorder	Eksisterende hypertension, der komplicerer OG/ELLER er behandlingsårsag under fødsel	Accepted	
Il sh	disorder	Illega ck		
Tractio chment of retina	disorder	Traktionløs af retina	Supplie	
Vitamin D deficiency	disorder	D-vitamin-mangel	Editorial board	D-vitaminmangel
Erythema infectiosum	disorder	Erythema infectiosum	Accepted	
Chronic passive congestion of liver	disorder	Kronisk passiv kongestion af leveren	Supplier review	kronisk passiv leverstase
Portal hypertension	disorder	Hypertensio portalis	Supplier SME	
Ectopic pregnancy	disorder	Ektopisk graviditet	Accepted	
Breast engorgement in newborn	disorder	Forstørrelse af bryst hos nyfødt (heksemælk)	Accepted	
Tendinitis	disorder	Tendinit	SST review 1	

English named concept

Danish translation

Actual stage in the process

Comments from the reviewer

Colour codes for all stages in the process

Save | Perform saved actions

Accepted | Editorial board | Supplier review | Supplier SME | SST review 1 | Translation

Sundhedsstyrelsen
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Hierarchy view

Home Conc ubsets Projects Qualification Request Workflow Translation Administration Help Sign out janni SST Sundterm

Browser A ed search ID search Your search Fatigue Search carecom

Choose hierarc HealthTerm SNOMED CT

- SNOMED T Concept
  - Clinical finding
    - Clinical history and observation findings
      - General finding of observation of pati
        - General body state finding
          - Energy and stamina finding
            - Fatigue
              - Asthenia
              - Fatigue - symptom
              - Tired
              - Tired all the time
              - Tired on least exertion
              - Tiredness symptom
              - Tiredness symptom NOS
              - Tires quickly

Sub-hierarchy

Parent concepts

Energy and stamina finding | General problem AND/OR complaint

Is a

Concept

Inverse attribute relationship

Show

Fatigue

Concept ID: 84229001
The Concept is Primitive
Fully specified name:
Fatigue (finding)
Status: Current
Preferred term ID: 139690015
CTV3ID: 1682.
SNOMEDID: F-01360

Relationship

Attribute relationship

Interprets

Concept

Energy / stamina

Is a

Children

Tired | Tires quickly | Tired on least exertion

Tired all the time | Asthenia | Tiredness symptom

Fatigue - symptom | Tiredness symptom NOS

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Home | Concepts | Subsets | Projects | Qualification | Request | Workflow | Translation | Administration | Help | Sign out janni | SST Sundterm

Browser | Advanced search | ID search | Your search | Fatigue | Search | carecom

Status	Accepted	ID: 84229001
Preferred Term (EN)	(s) Fatigue	
Preferred Term (DA)	træthed (t) **Change default value**	
Initial Capital Status	EN: IS NOT significant	cant
Fully specified name (EN)	Fatigue (finding)	
Synonyms (EN)	• Tiredness • Weariness	

English named term

Danish translation

Date	Workflow step	Choice	User	Preferred Term (DA)	Comment
May 10, 2005 3:25 PM	Translation	Translate	admin		
May 10, 2005 3:25 PM	Supplier review	Accept	admi		GEPKA oversættelse
Jun 2, 2005 10:36 AM	SST review 1	Doubt	susa		Fatigue er også oversat med træthed. Det drejer sig vel om udmattelse?
Jun 7, 2005 11:42 AM	Editorial board	Decision	asta		Enig i kommentar - udmattelse er lig med "exhaustion" på engelsk. Vi kan ikke have samme danske term. Fatigue bør altså være "træthed". AH

Similar concepts with Danish translation

Similar concepts	Preferred Term (DA)	Status
Vocal **fatigue**	Stemmetræthed	Accepted
Transient heat **fatigue**	forbigående træthed forårsaget af varme	Accepted
Peripheral muscle **fatigue**	Perifer muskeltræthed	Accepted
Neuromuscular **fatigue**	Neuromuskulær træthed	Accepted
Postviral **fatigue** syndrome	Postviralt træthedssyndrom	Accepted
Chronic **fatigue** syndrome	Kronisk træthedssyndrom	SST review 1
Combat **fatigue**	krigsneurose	Accepted
Low frequency muscle **fatigue**	lavfrekvent muskeltræthed	Accepted
Central muscle **fatigue**	central muskeltræthed	Accepted
High frequency muscle **fatigue**	højfrekvent muskeltræthed	Editorial board
Muscle **fatigue**	Muskeltræthed	Accepted

Further developments and lessons learnt

Further developments

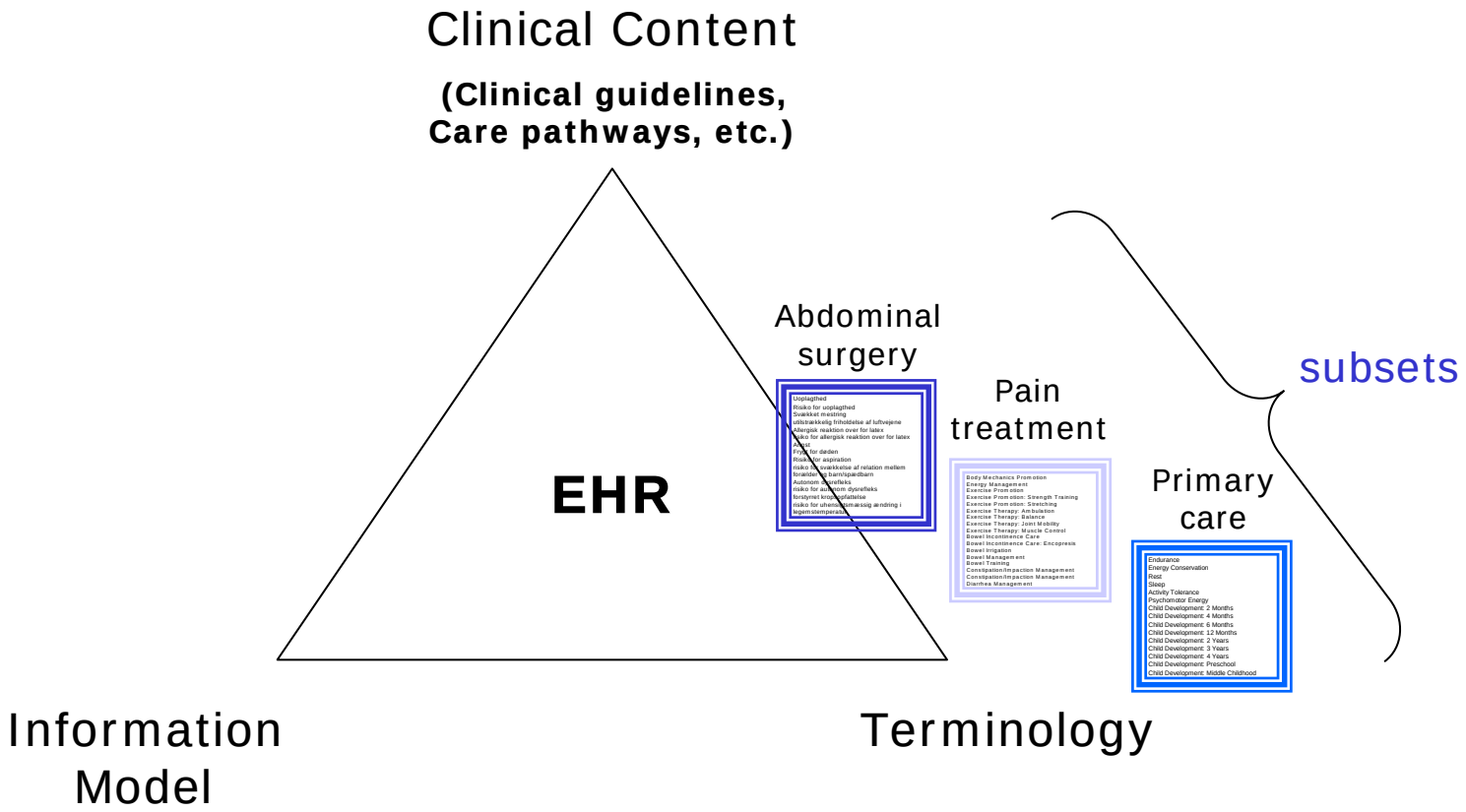
- 200.000 translated and validated concepts ultimo 2007
- 30.000 translated concepts has been clinical qualified of ultimo 2007
- Initiation of a EHR test project ultimo 2007
- 280.000 SNOMED CT concepts translated and clinical qualified 2010

Calculated costs for the whole project: 6.000.000 USD

Lessons learnt

- Using concept based translation the national context can expressed
- Iterations and feedback-loops increases quality and must be integrated in the process
- Linguistic guidelines are needed to get harmonised results
- A tool handling the workflow and supporting a distributed translation process is required
- Provision of synonyms and subsets are crucial for clinical acceptance
- Exchange of experience is needed – IHTSDO.org will support this

Requirements for a structured EHR



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- http://www.ihtsdo.org

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