3# Nordic openEHR Collaboration Meeting
2022.05.04 – Hosted by Norway
Agenda

- Welcome and introductions (15 min)
- Update on ongoing projects related to openEHR in Norwegian hospitals
  - Reproduction medicine
    Vebjørn Arntzen
  - Multidisciplinary teams in Cancer diagnostics/treatment - prostate and kidney (openEHR and SNOMED-CT)
    Bjørn Næss
  - Customer-driven development using openEHR tooling
    John Tore Valand
- Update on any current topics in the Nordic countries
- Update on ongoing activities within openEHR international
- Agreement on the next meeting
  - Proposed decision: Going back to Sweden in august?
HIGH complexity in mapping on both ends

MINOR complexity in mapping in both ends

National screening registry

FHIR

EHR

Registry specific

National quality registry

https://simplifier.net/oregibancolnosexreport
Patient safety supported by openEHR
Modelling patterns

- Risk is screened using different protocols. I.e. STRATIFY Falls Risk Assessment Tool, Brøset Violence Checklist (BVC), Nutritional Risk Screening (NRS 2002)

- To “normalize” risk we use EVALUATION Health risk assessment combined with SNOMED-CT to classify the risk:
  - at0002::Health risk, i.e. 65404009 | Undernutrition (disorder) |
  - at0003::Risk assessment, i.e. 15508007 | High risk of (contextual qualifier) (qualifier value) |

Information models combined with terminologies is a powerful combination
Nutrition
Workflow to order clinical nutrition physiologist with diet registration.
openEHR is well suited for solutions to follow up rare diseases
- An open community sharing models will make it possible to develop such solutions and share the cost of development between countries and regions.

Cystic fibrosis as an example
- A chronic disease from birth
- 370 people in Norway with the disease
- Helse Nord and DIPS develop an openEHR based solution to follow up the patient with the primary goal to create a history of antibiotic medication.
Cystisk Fibrosis
A list of all patients with CF on this hospital.
openEHR queries to provide decision and process support
Patient summary extracting relevant information about ongoing and planned activities.
### Active antibiotic medication for the given patient.

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Start date</th>
<th>Start time</th>
<th>Terapeutic goal</th>
<th>Antibiotic(s)</th>
<th>Comment</th>
<th>Effekt</th>
<th>Start date</th>
<th>Terapeutic goal</th>
<th>Antibiotic(s)</th>
<th>Comment</th>
</tr>
</thead>
</table>
The overall process

1. Referral
2. Outpatient contact
   - Patient reported data
   - Reports to national registry
3. MDT Meeting
   - Reports to national registry
4. Treatment
   - Reports to national registry
5. Follow up

Diagnostic process

- Reports to national registry

Treatment and follow up

- Reports to national registry
Diagnostic of prostate cancer

Expanded Prostate Cancer Index Composite for Clinical Practice (EPIC CP)

Vanrinatsfunksjon

1. Generelt, hvor stort problem vil du si at din vanrinatsfunksjon har vært for deg?
   - Null problem
   - Et lite problem
   - Et moderat problem
   - Et stort problem

2. Hvor mange inrinntinsbind eller bleier har du brutt per dag mot unirelikkeje?
   - Ingen
   - Et bind per dag
   - To bind per dag
   - Tre eller flere bind per dag

3. Hvor stort problem vil du si at du eventuelt har hatt med dypping eller unirelikkeje?
   - Null problem
   - Et lite problem
   - Et moderat problem
   - Et stort problem

Urinnkontinens

Outpatient contact

MDT Meeting

Opplysnings

Heuslengde: 157.00
Kroppshvikt: 85.00
Kroppsmassindex: 24.3 kg/m2
PSA: under det diagnosepunkt: 12.00
BSO: fremstår normalt
1. Sysmptomatisk, full oppregnende ASA: 1
   - ASA 1

Palpaonsfornøyden høyre

Palpaonsfornøyden venstre

MR Prostata

- Data for MR undersøkelse: 04. mai 2022
- Prostatafront: 12.00
- MRI: ikke utført

Bildefornøyde prostateparen

- MRI: ikke utført

Bildefornøyde vesen prostateparen

- MRI: ikke utført

Triage 2a

TNNH uttak

- UICC TNM Version 8

THM-klassifisjon

- Primærart (T)
- Regionaler lymphknoter (N)
- Tumorstadiet (M)

Fusjon høyere

- Target 1: ISUP Grade Group 1
- + Legs til target-biopsi

Fusjon venstre

- Target 1: ISUP Grade Group 3
- + Legs til target-biopsi

System høyere

- Antall positive ljenere: 0
- Antall negative ljenere: 2

System venstre

- Antall positive ljenere: 0
- Antall negative ljenere: 3

Briganti 2018

- PSA-snitt for biopsi
  - 12.00
- Organbegrænset sykdom

- Elektrolytt-kvælde
- Serum insulin
- Normal hvelde
- Maximal leverdiameter: 4.00
- ISUP Grade Group
  - ISUP Grade Group 1
- ISUP Grade Group 2

- Klinisk stadium
  - T1a-T2a

DAmico risk kassificering

- ASA:
  - 1
  - 2
  - 3
  - T2a

- Organbegrænset
- Sykdom

- Maligne

- Present deler ljenere med klinisk signifikante PCA

- Kalkulering risiko for lymphknotenmetastaser

Kvitt pålevelser:

- Ja
- Nei
- Ugyent

Kommentar

DIPS
Modelling pattern

- **EVALUATION** problem/diagnosis for the primary reason or disease/problem for the contact with the patient
- **EVALUATION** precaution for health conditions/problems which affect the treatment and/or diagnostic process
- **OBSERVATION** laboratory test for histopathological results
- **OBSERVATION** imaging exam result for imaging findings
- **OBSERVATION** exam for physical examination findings

- Use extension by **CLUSTER** to specific findings for each of the disease like:
  - **TNM** classification in either lab, imaging or physical findings
  - Renal nephrometry score
  - Gleason/ISUP grading
Clinical models – prostate cancer

- TNM classification
  - Using information model combined with terminology
    - Problem/diagnosis for clinical TNM
    - Labresult for histopathological TNM
    - Imaging examination for radiologic TNM
- New archetypes
  - ISUP Grade Group, https://www.uptodate.com/contents/image?imageKey=ONC%2F107132
  - Charlson comorbidity index, https://www.mdcalc.com/charlson-comorbidity-index-cci

New archetypes will be published to national and international CKM’s as soon as clinicians accept the solutions.

All models available here: https://github.com/DIP SAS/modelling-mdt