Establishing Clinical Decision Support for Virtual Molecular Tumor Boards

Stefan Sigle – MOLIT Institute
Who am I?

• Stefan Sigle
• Medical Informatics Professional
• PhD candidate
• Head of Department: Knowledge Management
• FHIR Experience: since DSTU2

https://molit.eu/
Where is MOLIT Institute located?

Source: BUGA Heilbronn 2019 GmbH
What does the MOLIT Institute do?
Molecular Tumor Boards (MTB) as the new standard of care

Supported by VITU
MTB preparation is still a manual process
Pipeline to semantically annotate clinical trials

- Step 1: API-Query and initial processing
- Step 2: Curate the database
- Step 3: Publish database utilizing an interoperable API Standard
How we use FHIR

- ResearchStudy and Group Resources
- SearchParameters on
  - ResearchStudy.condition
  - ResearchStudy.enrollment
- Example Query
Combining standards
Supporting MTB preparation through CDS HOOKS

- CDS Client
  - VITU
- Knowledge Components
  - CDS Services
    - CDS Service
  - Decision Model
  - Knowledge Databases
- CDS Cards
- EHR Repository
CDS Card Viewer within the VITU workflow

Parameters

Indexation Date

Suggested Clinical Trial
CDS-Card-Viewer Component is Open Source

• Based on the StencilJS Framework
• Works on all modern browsers
• Supports Angular, React, Vue frameworks
• Still WIP
• Built with love! by MOLIT Institut gGmbH ❤️ ❤️

Github: https://github.com/molit-institute/cds-card-viewer
Example: https://docs.molit.eu/cds-card-viewer/
More Components from MOLIT: Genomics Reporting Viewer

- Displays Genomic Reporting following the HL7 Genomics Implementation Guide
- Based on the StencilJS Framework
- Works on all modern browsers
- Supports Angular, React, Vue frameworks

Github: [https://github.com/molit-institute/genomics-reporting-viewer](https://github.com/molit-institute/genomics-reporting-viewer)
Example: [https://docs.molit.eu/genomics-reporting-viewer/](https://docs.molit.eu/genomics-reporting-viewer/)
Lessons learned

- Trial registers lack semantic depth
- FHIR enables extensibility
- CDS Hooks provide useful structure and enable easy integration
- CDS Spec does not accommodate separate links for each suggestion
Future steps

• FHIR based trial management
• More CDS parameters
• Feedback loops
Contact

• During DevDays, you can find / reach me here:
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Q&A

• Feel free to ask questions