

Five Hip Fracture Registries are now standardized into the OMOP CDM to Create a Mini Federated Network

Harmonising Surgical Data: Experience from the Hip Fracture 'Mini Federated Network of Registries'

Background:

National hip fracture registries collect rich surgical, perioperative and outcome data to monitor and compare hip fracture care, aiming to optimize patient outcomes. This project aimed to map their complex and non-standardized data into the OMOP CDM for enhanced international collaboration, audit and research

Result 1:

40 participants contributed to the HIPSTAR project during an in-person studyathon at the Fragility Fracture Network (FFN) Congress Oct 2023



Result 2: Five registries adapted a standardized ETL process to establish a relational databases and instantiate instances of Atlas for the first time and are now developing the HIPSTAR characterization study



Methods

1 Data Sources and Expertise

- Open call for data partners with hip fracture registries to harmonize their registry data supported by EHDEN
- Collaboration of experts in nursing, physiotherapy, surgery, medicine, epidemiology, statistics, and data analysis

3 Hip Fracture Studyathon - October 3, 2023

- Stakeholders from Canada, Denmark, Norway, Sweden, Australia & New Zealand, Ireland, Germany, and Spain, came together in Oslo, Norway to finalize the HIPSTAR phenotypes, study design and protocol

2 Extract, transform, and load (ETL) process

- Based upon existing Minimum Common Dataset in FFN
- Iteration of ETL using expert opinion in NHFD data with SME support for procedure, device, anaesthetic & outcome data
- Comparison of each registry of surgical data to standardized ETL

4 Study generation

- 5 registries across three continents completed their data transformation into the OMOP CDM by Studyathon
- Initial characterization studies running in first 5 registries
- Additional registries following ETL process for future studies

Limitations:

Establishing a robust network in this field faces challenges due to a lack of standardization of surgical data within the CDM in addition to data heterogeneity and fewer OMOP knowledge experts in this area. Clear protocols, robust data management, and technical support for first time adopters are crucial for successful network operation.



Marissa G. Fiorello¹, Kristin Kostka¹, Justin Manjourides^{1,2}, Xavier L. Griffin³, Jennifer C.E Lane³

¹ The OHDSI Center at the Roux Institute, Northeastern University, Portland, ME, USA

² Department of Health Sciences, Northeastern University, Boston, MA, USA

³ Barts Bone and Joint Health, Queen Mary University of London, London, UK

