

The journey from central operational data-lake to Medical Centers CDM network

Guy Livne

INTRO:

- Directorate of government medical centers in Israel established a CDM network combine EHR data form 11 medical centers, dealing with regulation, privacy and technology issues

Main Challenges:

1. Translate local nonstandard Israeli terminologies to OMOP standard.
2. Define cloud security regulations as the first cloud-based solution for medical records in the Israel.
3. Combine data from different sites to one data-lake, preserving patient privacy with consistency across sites.

Achieves:

- ✓ CDM network of 3 medical centers and plan for additional 3 by the end of year 2022.
- ✓ Unify person_id solution.
- ✓ Encryption & anonymization implemented in the ETL process.
- ✓ Use of ML models & NPL for terminology translation.
- ✓ 2-month flow from feasibility check to study.

Anonymize EHR data from country-wide Hospitals network combined to one CDM

15 years of history records



Combined CDM

Encrypted & anonymize



Variety of treatments and diagnosis

12M visits
4M patients



Kineret web site

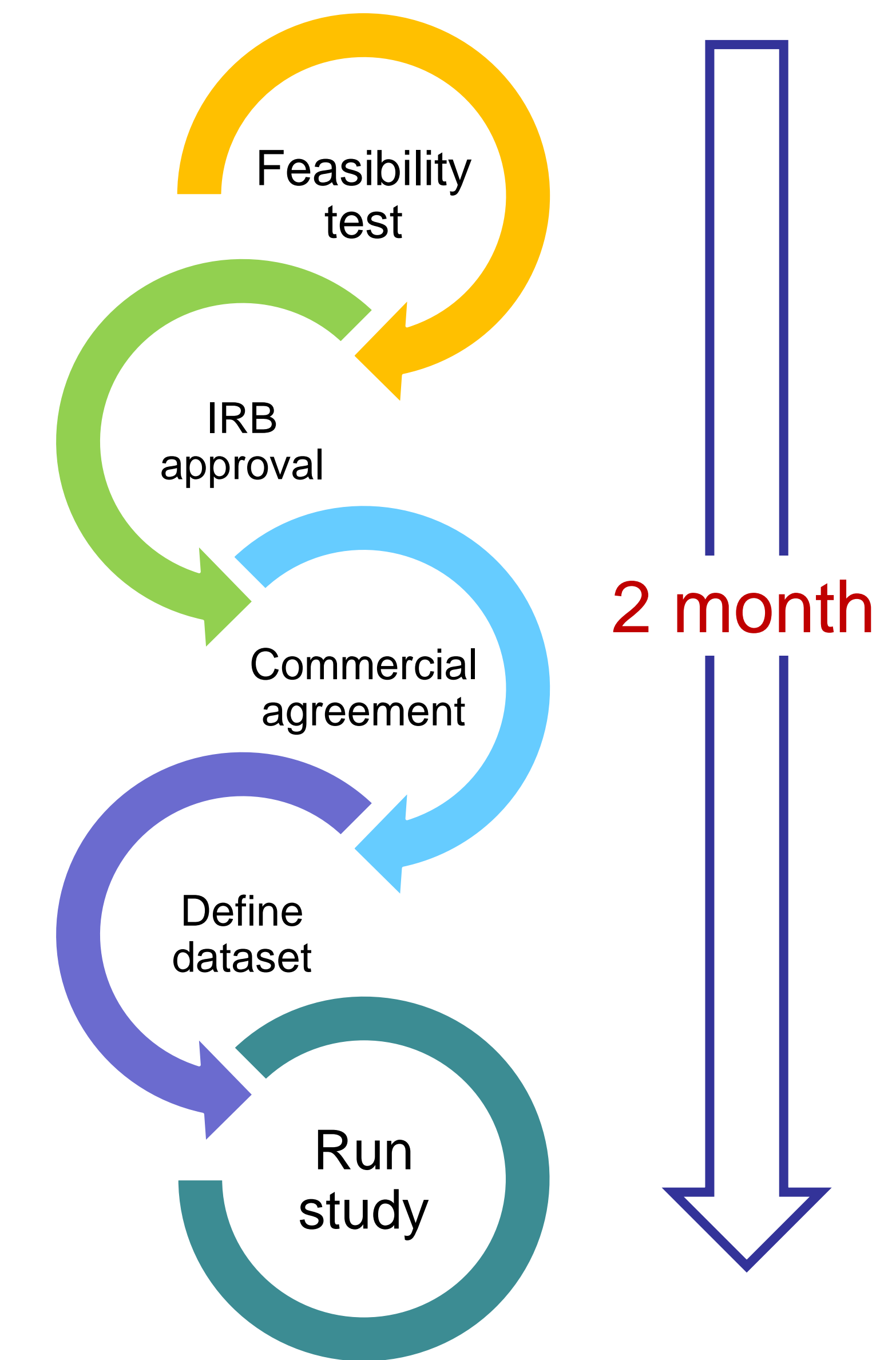


EHDEN portal



Guy Livne

Fast track for study



Guy Livne, Nadav Rappoport, Nir Makover, Hadas Eshel-Geva, Hadar Kapach, Tomer Hadad, Yarin Alon, Naama Perry-Cohen