

## **Project Summary Report**

**YODA Project Protocol #: 2020-4454**

### **Inferential reproducibility of therapeutic research: a registered report for a cross-sectional study of RCTs available on major data-sharing platforms**

**Status:** Analysis completed and article has been prepared for dissemination, publication remains pending

#### **Abstract from article prepared by investigators:**

##### **Objective**

To explore inferential reproducibility (i.e. Individual Patient Data is available, and qualitatively similar conclusions can be drawn from a re-analysis of the original trials) for RCTs, for which there is available data on major data-sharing platforms.

##### **Methods**

The breakdown of studies included by platform is as follows: 33 (53.2%) studies on Vivli, 22 (35.5%) on CSDR, 6 (9.7%) on YODA and 1 (1.6%) on Project Data Sphere. The data access requests were sent to the platforms concerned between September 15, 2020 and September 23, 2020. The procedure for requesting data on the platforms was generally done as follows: 1/ Creation of an account on the platform; 2/ submission of the data request; 2/ Review of the research proposal (verification of the information provided, examination and validation of the research proposal); 3/ once the request was accepted, the data use agreement had to be signed before access to data through a remote environment. All reanalyzed studies were Phase 3 studies and only two studies (2/21) have noncommercial funders. For the 21 studies, we identified 24 distinct primary outcomes that were all reanalyzed, all resulting in 39 comparisons.

##### **Results**

At this stage of our study, 18/21 (85.7%) reanalyses have inferentially reproduced the original results. When IPD and sufficient documents are available, original results are generally inferentially reproduced. This conclusion was also made in another reproducibility project of the ReiTheR program submitted as a registered report. This second study involved a similar method to study the reproducibility of pivotal trials assessed by the European Public Assessment Report (EPARs), for new authorized human medications and biosimilars approved by the European Medicines Agency (EMA). All the 23 distinct outcomes reanalysed were considered as inferentially reproduced. However, data were only obtained for ten of the 62 main trials for which data were requested. The reproducibility rate in this study was therefore 16%, due to the lack of IPD availability, despite the fact that a large majority of sponsors had a data-sharing policy. In our study, only 9,6% (6/62) data requests were denied to date.

##### **Conclusions**

Despite long delays, the main clinical data sharing platforms succeed in their ambition, which is to make access to data possible for external researchers, compared to other means of requesting data. Our preliminary results suggest that the re-analyses of clinical data shared by such platforms have good inferential reproducibility. Bearing in mind that it is likely that studies shared on data sharing platforms differ regarding several reproducibility features from the trials that are not shared by the same entities, these results provide fresh insights on reproducibility of therapeutic research.