Subject: Article Submission - Step-by-step Causal Analysis Of Ehrs To Ground Decision Making

Paris, France, 31st of July 2023

Dear Editors of npj Digital Medicine,

Please find our submission on a step-by-step causal analysis of electronic health records to ground decision making for consideration in "npj Digital Medicine", as a research article.

We believe that our manuscript will be of great interest to the readers of "npj Digital Medicine", as it addresses a critical aspect of healthcare decision-making using data-driven approaches and emphasizes the significance of causal thinking in improving individual predictive modeling for healthcare. Indeed, developing machine-learning without causal ground has recently led to a variety of models predicting from « shortcuts », improper for clinical usage.

The manuscript introduces and demonstrates a didactic framework for building causally-sound analyses of clinical data, specifically focused on fine grained time-varying data such as Electronic Health Records. We showcase the practical applicability of our approach with a study of resuscitation fluid for sceptic patient on the Medical Information Mart for Intensive Care database (MIMIC-IV) .

Our manuscript provides clear and accessible insights into the implementation of the methodology by making both the code and the data openly available. We believe this transparency will be instrumental in promoting good practices in this important area. We have taken great care in writing the manuscript such that it can be convincing and easily understandable even for researchers without any background in causal inference.

Thank you for considering our submission. We look forward to receiving your feedback and hope for the opportunity to share our work with the readers of Nature Digital Medicine.

Yours sincerely,

Matthieu Doutreligne and Gaël Varoquaux on behalf of all the authors