

# Insights into the FAIRness of the German Network University Medicine: A Survey

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**Abstract.** The need to harness large amounts of data, possibly within a short period of time, became apparent during the Covid-19 pandemic outbreak. In 2022, the Corona Data Exchange Platform (CODEX), which had been developed within the German Network University Medicine (NUM), was extended by a number of common components, including a section on FAIR science. The FAIR principles enable research networks to evaluate how well they comply with current standards in open and reproducible science. To be more transparent, but also to guide scientists on how to improve data and software reusability, we disseminated an online survey within the NUM. Here we present the outcomes and lessons learnt.

**Keywords.** FAIR, Network University Medicine, Medical Informatics

## 1. Introduction

The determined goal of the German Network University Medicine (NUM) was to coordinate the University Hospital's COVID-19 strategies and research activities and share Covid-related data across Germany [1]. Research networks, in general, spend time and effort on implementing such strategies for data and software interoperability and sharing. This work elaborates on the current status of “FAIRness” within NUM.

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## 2. Methods

We created a survey composed of 33 questions with over 100 possible answers [2], based on previously established questions from online FAIR frameworks and self-assessment tools. The draft questionnaire was revised with FAIR experts and the final survey thematically divided into general questions about the projects and experiences with FAIR evaluations, followed by four sections each addressing a FAIR category (Findable, Accessible, Interoperable, Reusable). Results were captured in REDCap, a secure GDPR compliant and widely used Research Electronic Data Capturing Tool. We disseminated the survey link in NUM internal meetings, the NUM newsletter and social media.

## 3. Results and Discussion

During the productive survey time (75 Days), only five entries from a total of three NUM projects were fully submitted even though over 100 entries had been recorded. This response rate prohibits statistically relevant statements. However, we saw that NUM projects make use of local and global identifiers for data items, have Standard Operation Procedures in place, and use common semantic interoperability standards. A specific example emphasizing on the use of FAIR principles in research software development [3] within NUM is the Anonymous Synthesizer for Health Data (ASyH, <https://github.com/dieterich-lab/ASyH>), an easy-to-use open-source software for creating synthetic data with machine learning models trained on real data, used and developed in the NUM CODEX+ subproject.

## 4. Conclusion

We notice general advertisement of the FAIR data principles in the NUM community, but the survey showed only limited implementation within the actual projects. We suggest that more information on the benefits of FAIRification should be provided and the leadership should develop a strategy for FAIR research data management including provenance information, licensing, open data repositories. Specifically, more knowledge about metadata, version control and licenses is needed.

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