Plan Overview

A Data Management Plan created using DMPonline

Title: PhD - Real Time logistics of patients & decision-making strategies for disasters

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Template: TU Delft Data Management Plan template (2021)

Project abstract:

This research project aims to develop an approach and model for patient flow management during disasters. Thus far, the fields of disaster logistics and patient flows are largely separate, even though there are many important feedback loops between disaster logistics and health care system that need to be considered, such as the evacuation, routing and allocation of patients, triage decisions, location of (field) hospitals. Disasters are also known to change decision-making and behaviour as they impose great uncertainty and time pressures. We hypothesise that these phenomena, as well as the capacity constraints, informational or infrastructural bottlenecks are barely considered in the patient flow logistics literature. By conducting interviews and ethnographic research for two comparative disaster-case studies across healthcare service providers, emergency professionals and affected communities, we aim to collect data on decision-making, behaviour, sensemaking, organizational protocol and processes across the different realms. This data will feed into a conceptual decision and flow models that encapsulates the behaviour, uncertainties and disruptions typical for a disaster. Based on this conceptual flow model, a simulation model will be developed to test the impact of different possible interventions on the effectiveness, efficiency and equity of the patient flow for different disaster scenarios.

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PhD - Real Time logistics of patients & decision-making strategies for disasters

0. Administrative questions

1. Name of data management support staff consulted during the preparation of this plan.

Nicolas Dintzner

2. Date of consultation with support staff.

2023-12-10

I. Data description and collection or re-use of existing data

3. Provide a general description of the type of data you will be working with, including any re-used data:

Type of data	File format(s)	How will data be collected (for re-used data: source and terms of use)?	Purpose of processing	Storage location	Who will have access to the data
Literature extraction	.csv/.ris	Manually with search strings and storage on reference managers	Understand the fields and their interactions	Dedicated project storage U: + (SurfDrive)	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)
Interviews audio	.csv/.mp3	Recorded during qualitative semi-structured interviews with stakeholders	For the creation of the interview transcripts and extraction forms to create data on decision-making/behaviours	Dedicated project storage U:	Julien Magana (PhD Candidate)
Qualitative Interview transcripts/coding book	.docx/.csv	Creation from interviews conducted	For the creation of data on decision-making/behaviours	Dedicated project storage U:	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)
Decision-Making Behavior Data	.csv/.docx	Creation from interview transcripts and observations / Re-use of online available data on previous events	To use as inputs for the simulation model and for comparative analyses / To understand decision-making behaviours of patients in disasters.	Dedicated project storage U: drive + (SurfDrive)	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)

Comparative Analyses Data	.csv	Creation from extracted data from interview transcripts	To use as inputs for the simulation model and to understand differences in patient's decision-making behaviours during various disaster scenarios	Dedicated project storage U: + (SurfDrive)	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)
Simulation Model Data	.csv/.json/.python	Creation from collected data during case studies and re-use of existing data on healthcare facilities, locations, transportation networks, patient behaviours	Use to formulate recommendations to enhance the efficiency of patient flow logistics in disasters.	Dedicated project storage U: + Git	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)
Project Reports and Recommendations	.tex	Dissemination of findings for the 4 projects through manuscripts	To disseminate findings with scientific communities and spread information related to the 4 projects (academia and stakeholders recommendations).	Dedicated project storage U: + (SurfDrive)	Julien Magana (PhD Candidate) Tina Comes Saba-Hinrichs-Krappels (promoters)

4. How much data storage will you require during the project lifetime?

- 250 GB - 5 TB

II. Documentation and data quality

5. What documentation will accompany data?

- Methodology of data collection
- README file or other documentation explaining how data is organised
- Data will be deposited in a data repository at the end of the project (see section V) and data discoverability and re-usability will be ensured by adhering to the repository’s metadata standards

III. Storage and backup during research process

6. Where will the data (and code, if applicable) be stored and backed-up during the project lifetime?

- Project Storage at TU Delft
- Git(lab)/subversion repository at TU Delft
- SURFdrive

IV. Legal and ethical requirements, codes of conduct

7. Does your research involve human subjects or 3rd party datasets collected from human participants?

- Yes

8A. Will you work with personal data? (information about an identified or identifiable natural person)

If you are not sure which option to select, ask your Faculty Data Steward for advice. You can also check with the privacy website or contact the privacy team: privacy-tud@tudelft.nl

- Yes

Yes, partially, the focus is on aggregating interview insights to discern broader behavioural patterns and trends among various actors. The study aims to analyze collective tendencies rather than dealing with specific personal information, ensuring a commitment to privacy and ethical research practices. Only personal information would be position and email address for example but for classification and organization purposes not for research use.

8B. Will you work with any other types of confidential or classified data or code as listed below? (tick all that apply)

If you are not sure which option to select, ask your Faculty Data Steward for advice.

- Yes, politically-sensitive data (e.g. research commissioned by public authorities, research in social issues)

Yes, the research will involve handling politically sensitive data, particularly research commissioned by public authorities and inquiries into social issues. The chosen topic addresses critical concerns in healthcare systems during disasters, exemplified by the recent COVID-19 pandemic and other natural calamities. The study seeks to bridge existing gaps in patient flow models by integrating disaster logistics and healthcare system considerations. Given the potential impact on public health and the societal implications of optimizing patient flows and disaster response coordination, the research inherently addresses a social issue. By delving into real cases and theoretical concepts, the project aims to contribute valuable insights that could enhance healthcare systems' resilience and improve patient flow logistics efficiency during unforeseen challenges. The commitment is to handle such sensitive data responsibly, focusing on the broader societal benefits of the research outcomes.

To mitigate these political risks, feedback loops will be included with the interviewees to be aligned with what will be in the publications and made public, it will be presented in the informed consent form that the interviewees will need to sign.

9. How will ownership of the data and intellectual property rights to the data be managed?

For projects involving commercially-sensitive research or research involving third parties, seek advice of your Faculty Contract Manager when answering this question. If this is not the case, you can use the example below.

Ownership of the data and intellectual property rights will be managed in accordance with the collaborative nature of the research. TU DELFT, will retain ownership of the raw data, findings, and intellectual property, there is a collaborative component involving a group project called PDPC (Pandemic Disaster Preparedness Center), as part of the Convergence initiative involving Erasmus MC and Erasmus University that I am part of in the project called "Frontrunner 3 Pandemic lessons for flood disaster preparedness", certain findings, rather than raw data, will be shared with this group for collaborative analysis but no personal or raw data. There is no common approach among the project for data related sharing and ownership, therefore, TU Delft owns the data and this research is considered an internal TU DELFT project. The data shared will adhere to ethical and legal considerations, ensuring privacy and confidentiality. Additionally, the outcomes of the studies will be publicly released following the TU Delft Research Data Framework Policy, aligning with transparency and open science principles. Managing data ownership and intellectual property rights will prioritize responsible collaboration and adherence to institutional policies and guidelines.

10. Which personal data will you process? Tick all that apply

- Names and addresses
- Email addresses and/or other addresses for digital communication
- Data collected in Informed Consent form (names and email addresses)
- Other types of personal data - please explain below
- Signed consent forms

- Job type
- Activities
- Outcomes, actions and what they saw : experiences
- Signature, name, email address (informed consent form)

11. Please list the categories of data subjects

- Health workers who participates the study from various health facilities located in Netherlands, Belgium and Germany (Limburg Province and Ahr Region).

12. Will you be sharing personal data with individuals/organisations outside of the EEA (European Economic Area)?

- No

15. What is the legal ground for personal data processing?

- Informed consent

An Informed consent form will be given to the participants beforehand and walked through with them on the moment of the interview.

16. Please describe the informed consent procedure you will follow:

All study participants will be asked for their written consent for taking part in the study and for data processing before the start of the interview.

17. Where will you store the signed consent forms?

- Same storage solutions as explained in question 6

Project Drive (:U)

18. Does the processing of the personal data result in a high risk to the data subjects?

If the processing of the personal data results in a high risk to the data subjects, it is required to perform a Data Protection Impact Assessment (DPIA). In order to determine if there is a high risk for the data subjects, please check if any of the options below that are applicable to the processing of the personal data during your research (check all that apply).
If two or more of the options listed below apply, you will have to complete the DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to receive support with DPIA.
If only one of the options listed below applies, your project might need a DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to get advice as to whether DPIA is necessary.
If you have any additional comments, please add them in the box below.

- None of the above applies

22. What will happen with personal research data after the end of the research project?

- Anonymised or aggregated data will be shared with others
- Personal research data will be destroyed after the end of the research project

Personal data destroyed one month after the end of the PhD project (March 2027)

23. How long will (pseudonymised) personal data be stored for?

- Other - please state the duration and explain the rationale below

For the duration of the PhD Project (until February 2027).

24. What is the purpose of sharing personal data?

- Other - please explain below

No personal data is going to be shared.

25. Will your study participants be asked for their consent for data sharing?

- Yes, in consent form - please explain below what you will do with data from participants who did not consent to data sharing

The data from participants who did not consent to data sharing will be destroyed, although no sharing of personal data is planed in this project, if a participant wants its data destroyed, it will be destroyed accordingly.

Inputs not shared but outcomes from the study (studies, behaviours, models).

V. Data sharing and long-term preservation

27. Apart from personal data mentioned in question 22, will any other data be publicly shared?

- All other non-personal data (and code) produced in the project
- All other non-personal data (and code) underlying published articles / reports / theses
- All validated non-positive results which do not contain personal data

Behaviour data, template consent form, interview protocol.

29. How will you share research data (and code), including the one mentioned in question 22?

- All anonymised or aggregated data, and/or all other non-personal data will be uploaded to 4TU.ResearchData with public access
- I will share my data and code via git(lab)/subversion and also create a snapshot in a repository

30. How much of your data will be shared in a research data repository?

- < 100 GB

31. When will the data (or code) be shared?

- As soon as corresponding results (papers, theses, reports) are published

32. Under what licence will be the data/code released?

- CC BY-SA

The data and code will be released under the CC BY-SA (Creative Commons Attribution-ShareAlike) license. This license allows others to remix, tweak, and build upon the work, even commercially, as long as they credit the author for the original creation and license any new creations based on the work under the same terms. This choice promotes open collaboration and knowledge sharing while maintaining control over the derivative works to ensure they remain open and accessible to the community, just as my project goals and aspirations aim.

VI. Data management responsibilities and resources

33. Is TU Delft the lead institution for this project?

- Yes, leading the collaboration - please provide details of the type of collaboration and the involved parties below

Yes, TU Delft is the lead institution for this project, spearheading the collaboration known as the Pandemic Disaster Preparedness Center (PDPC). The partnership involves multiple partners, including Erasmus MC and Erasmus University, and is part of the broader "Convergence" initiative. As the recipient of PDPC funding, TU Delft is central in coordinating and driving the research activities. The collaboration encompasses a multidisciplinary effort, pooling expertise from different institutions to address critical issues related to patient flow logistics during disasters.

34. If you leave TU Delft (or are unavailable), who is going to be responsible for the data resulting from this project?

1st Promotor of my PhD :

Tina Comes (t.comes@tudelft.nl)
TU Delft, Faculty TPM

35. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

The resources dedicated to data management and ensuring FAIR principles will be carefully allocated to facilitate effective archiving and accessibility of the research data. Utilizing the 4TU.ResearchData repository, which offers free archiving services, helps optimize financial resources. The commitment to making data FAIR (Findable, Accessible, Interoperable, Re-usable) will be embedded in the PhD trajectory, ensuring that efforts to enhance data discoverability, accessibility, and usability are an integral part of the research process. This approach reflects a proactive strategy to uphold the highest standards of data management and aligns with the commitment to transparency, collaboration, and the broader principles of open science. The investment in these resources underscores the importance of fostering a research environment that promotes knowledge exchange and the long-term impact of the research outcomes.