



RESPIRE Data Management Plan (DMP): Template (adapted from the University of Edinburgh)

Name:	Professor Dr Ee Ming Khoo
Project Title:	Air Quality Study: An ecological analysis of asthma health outcomes in Malaysia: a feasibility study
Institute:	University of Malaya, Kuala Lumpur, Malaysia
Start Date:	1 st July 2019
End Date:	31 st December 2020
DMP version number and date:	DMP Version 1 and 01.12.2020

Responsibilities & Resources (applicable across the sections below)

Who will be involved in the data management of this research?

Person in charge:

Principal investigator, principal investigator at the site and research manager of the project are listed below:

1. Principal/Coordinating Investigator: Professor Dr Ee Ming Khoo
2. Principal Investigator at the site: Dr Norita Binti Hussein
3. Research Manager: Jayakayatri Jeevajothei Nathan

Resources:

Hardware and software used in the management of data are listed below:

1. Laptop (encrypted and secured with username and password and kept in a locked cabinet)
2. Thumb drive (encrypted, password protected and kept in a locked cabinet)
3. Solid-state drive (encrypted, password protected and kept in a locked cabinet)
4. DataStore (to back up active research data)
5. Microsoft Word
6. Microsoft Excel
7. SPSS Software version 25.0
8. Locked cabinet for any hard copies (research protocol)

1. Data Capture

What data will be generated or reused in this research?

Data that were or will be generated are listed below:

1. Health Data - Electronic and manual records of nebuliser use and admissions between 2014 and 2017 were collected from Tengku Ampuan Rahimah Hospital (HTAR) emergency



department, Bandar Botanik Health Clinic, Pandamaran Health Clinic and University Malaya Medical Centre (UMMC) emergency department and that includes sociodemographic and personal profiles: age, gender, ethnicity, date of visit, time of visit, diagnosis, nebulizer given, Peak Expiratory Flow Rate (PEFR) pre nebulizer, PEFR post nebulizer, oxygen saturation, action after initial treatment, discharge medication.

2. Virology Data - Respiratory syncytial virus, Influenza A and B, and Adenovirus data between 2014 and 2017 were obtained from Institute of Medical Research and UMMC.
3. Meteorology Data – Air temperature, solar radiation, relative humidity, wind speed and direction, that can influence air pollution concentrations and dispersion between 2014 and 2017 were collected from the weather stations of Department of Environment located at Subang.
4. Environment Data - Air pollution index data that includes carbon monoxide, ozone, particulate matter with an aerodynamic diameter of $< 10 \mu\text{m}$ (PM₁₀), sulphur dioxide and nitrogen oxides between 2014 and 2017 were collected from two monitoring sites of Department of Environment which are located closest to HTAR, Bandar Botanik Health Clinic, Pandamaran Health Clinic and UMMC.

How much data will be generated?

50GB – 250GB

2. Data Management

How will the data be documented to ensure it can be understood?

Source documents were documented in Microsoft excel and SPSS. A codebook containing information about each of the variable in the dataset were created to ensure that the data is understood and interpreted properly.

Where will the data be stored and backed-up?

The electronic data were stored in two RESPIRE laptops, a thumb drive, a solid-state drive and will be backed-up in DataStore. Hard copy of the research protocol was stored in locked cabinet.

3. Integrity

How will you quality assure your data?

A manual for data documentation were given to all the trained researchers of each site to ensure data consistency. Data documented in Microsoft excel and SPSS were or will be checked by another researcher for completeness and accuracy.

4. Confidentiality

How will you manage any ethical and Intellectual Property Rights issues?

1. The study will be conducted in accordance with the principles of the International Conference on Harmonisation Tripartite Guideline for Good Clinical Practice (ICH GCP). All required approvals have been obtained.
2. The investigator is responsible for the overall conduct of the study at the site and compliance with the protocol and any protocol amendments.
3. All reports and other records will be identified in a manner designed to maintain participant confidentiality. Clinical information will not be released without the written permission of the participant. The Investigator and study site staff involved with this study may not disclose or use for any purpose other than performance of the study, any data, record, or other unpublished, confidential information disclosed to those individuals for the study. Prior written agreement from the sponsor or its designee must be obtained for the disclosure of any said confidential information to other parties.
4. All Investigators and study site staff involved with this study must comply with the requirements of the appropriate data protection legislation including the General Data Protection Regulation and Data Protection Act 2018 with regard to the collection, storage, processing and disclosure of personal information and will uphold the Act's core principles.

5. Retention and Preservation

Which data do you plan to keep and for how long?

The electronic data will be preserved for long term.

How will the data be preserved?

The electronic data will be preserved in two RESPIRE laptops, a thumb drive, a solid-state drive and on DataVault.

6. Sharing and Publication

Which data will be shared and how?

The conference abstract presentations, journal articles and dissemination event will be shared in DataShare.

Are any restrictions on data sharing required?



The data obtained from the Department of Environment and Meteorology will only be used for data analysis in this project and not be shared. These are the conditions set for use by the Department of Environment and Meteorology.

Yes, prior to release for sharing, there remains the possibility of deductive disclosure of subjects with unusual characteristics. Thus, for data archived in Edinburgh DataVault, we will make the data available to users only under a data-sharing agreement that provides for:

1. A commitment to using the data only for research purposes and not to identify any individual participant;
2. A commitment to destroying or returning the data after analyses are completed.

