HBM4EU science and policy for a healthy future

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Outline of a study protocol for combined HBM and health study

WP 11. Combining HBM, health studies and registers

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1 Authors and Acknowledgements

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2 Use and objectives

This document provides an outline for the study protocol when combining HBM and health studies. When filled-in, the study protocol can also serve as a fieldwork manual even though it will include also sections such as funding which are not relevant for a fieldwork manual. The outline lists the topics which should be covered in the national/regional study protocol. For more detailed guidelines on the specific topics, please see:

- For HBM issues at least following documents would be relevant. They are available through HBM4EU website Online Library at https://www.hbm4eu.eu/online-library/
    - Knudsen L et al. Deliverable 1.5 Legal and Ethical Policy Paper (2018).
    - Lermen D et al. Deliverable 7.2 Strategy and SOPs for human sample exchange, including ethical demands (2017).
    - Fiddicke U et al. Deliverable 7.3. 1st prioritisation Report on survey design: Study protocol, SOPs and Guidelines, tailored and transferred questionnaires for recruitment and sampling (2018).
    - Katsonouri A et al. Deliverable 7.4 1st material for communication to participants, including informed consent (2018).
    - Göen T. Deliverable 9.4 The quality assurance/quality control scheme in the HBM4EU project (2017).
    - Cequier E et al. Deliverable 9.2 Prioritised list of biomarkers, matrices and analytical methods for the 1st priorisation round of substances (2017).
- For health examination survey (HES) issues
    - Tolonen H (ed.) EHES Manual. Part A. Planning and preparation of the survey. 2nd edition. National Institute for Health and Welfare, 2016, Directions 2016_13. URN:ISBN:978-952-302-700-8, URL: http://urn.fi/URN:ISBN:978-952-302-700-8
    - Tolonen H (Ed.) EHES Manual. Part B. Fieldwork procedures. 2nd edition. National Institute for Health and Welfare, 2016. Directions 2016_14. URN:ISBN:978-952-302-701-5, URL: http://urn.fi/URN:ISBN:978-952-302-701-5
- For combined HBM and health survey issues
    - Tolonen H et al. Deliverable D11.1 Report on opportunities and obstacles of combining HBM and health studies, availability of health studies with biological samples, availability of administrative registers, and guidelines for combining HBM and health studies (2018). Available through HBM4EU website Deliverables at https://www.hbm4eu.eu/deliverables/
    - Tolonen H et al. 1st updated of Report on opportunities and obstacles of combining HBM and health studies, availability of health studies with biological samples, availability of administrative registers, and guidelines for combining HBM and health studies (due on April 2019, will include SOPs for health measurements). Will be available through HBM4EU website Deliverables at https://www.hbm4eu.eu/deliverables/

It is highly recommended that feasibility studies conducted under HBM4EU will use this outline to prepare their survey protocol. For feasibility studies, this protocol and its annexes are needed in English to facilitate evaluation. As an exception, official documents such as ethical approval documents that may be available only in a national language, can be provided in the national language and described in English.

In possible further national studies, the protocol can be prepared in national languages.

3 Outline for the protocol

3.1 Aims and purpose of the survey

Describe here the aims and purpose of this combined survey.

Provide a description why you are combining HBM and health study and what are the expected benefits of doing so.

3.2 Organization and management of the survey

Describe here organization and management structure of your survey.

Provide a description of the responsibilities of each part/body of organization.

This may vary considerably between surveys.

3.3 Preparatory phase

3.3.1 Target population and sample size

3.3.1.1 Target population

Describe here the target population of the survey. What is the geographical coverage, are both rural and urban areas included? Are both men and women (boys and girls) included, which age groups are covered? Are there some specific exclusion criteria (language skills, institutionalised, minimum duration of living at the region concerned, hot-spots etc.)?

Describe the relationship between health study population and HBM population.

Is a reference group of participants included?

3.3.1.2 Sample size

Provide here the sample size for the study.

Provide justifications for the sample size, i.e power calculations, which take into account the expected prevalence of substances under study and included health indicators and expected participation rate.

3.3.2 Sampling procedures

3.3.2.1 Sampling frame

Provide here information about used sampling frame(s) in each stage of the sampling procedure. This information should include at least the name of the sampling frame, when it was last updated, what kind of information was obtained from it and who owns the sampling frame.

3.3.2.2 Sampling procedure

Describe the sampling procedure in detail. How many stages are used, what are the Primary Sampling Units (PSU), what are the Secondary Sampling Units (SSU), what kind of stratification is used, what is the sample size in each stage, which level of representativeness is aimed at, which sampling frame(s) is/are used etc.

If some survey modules are conducted only in a sub-sample of the entire study sample, describe how those sub-samples are defined and individuals for them selected.

3.3.3 Legal, ethical and data confidentiality issues

3.3.3.1 National legislation and regulations

Specify here the national legislation and regulations, which have an effect on conducting the study (such as regulations concerning ethical issues, medical research and data protection). Describe also the implications of these laws and regulations on the survey.

3.3.3.2 Process for ethical approval and informed consent

Describe here which authority provides the ethical approval for the national survey. Describe the process of obtaining the ethical approval and the documents needed for it.

Provide also an estimate of the time how long it takes to prepare the needed material and obtain

the ethical approval.

If ethical approval is already available, provide it as an Annex to the protocol. If it is in a national language, provide an explanation/a short summary in English.

Provide also the informed consent form with all the supporting documents (information leaflet, etc.) approved by ethics committee if already available as an Annex to the protocol, or provide a draft of informed consent form with supporting documents. Take the national legislation and GDPR into account when drafting these.

Describe how the informed consent is obtained from the participants.

3.3.3.3 Data protection

Describe here which authority provides data protection approval (if applicable in your country).

Describe here how data protection regulation (GDPR and national) will been taken up in the study.

Who is/are data controller(s)?

If approval by data protection authority is available provide it as an Annex to the protocol. If it is in a national language, provide an explanation/ a short summary in English.

3.3.4 Selected survey modules

3.3.4.1 Questionnaires

List here the questionnaires selected to the survey and the sections (topics) included in them, and provide a rationale behind their selection. This should also include selection of substance specific questionnaire sections.

Describe how the different questionnaires are administered (self-administered questionnaires or interviews; paper questionnaires or online questionnaires, face-to-face or telephone-administered interviews etc.).

Provide the questionnaire(s) as an Annex to the protocol.

If a questionnaire is administered by interview, provide also the interviewer manual as an Annex to the protocol.

How long is the questionnaire (number of pages and number of questions)? How long does it take to complete it?

Who fills in the questionnaire or answers the questions in an interview, the participant himself/herself, his/her guardian etc.? Are proxy respondents allowed?

Describe in which languages the questionnaire(s) are available.

Describe here how the completed, self-administered, questionnaires are checked on the field. If

some of the questionnaires are filled in during an interview, describe also the instructions or other supporting material provided for the interviewers.

Are non-respondent questionnaires used to help in assessing selection bias? If yes, provide it as an Annex to the protocol with the other questionnaires.

3.3.4.2 Health measurements

List here the selected measurements for the survey and provide a rationale behind their selection.

Provide detailed measurement protocols for all selected measurements. Provide HBM4EU SOPs for those selected measurements for which they exist as an Annex to the protocol.

Describe the equipment planned to be used for each measurement.

Provide measurement data collection forms for each included health measurement as an Annex to the protocol.

3.3.4.3 Collection and handling of biological samples and related laboratory analysis

List here which types of biological samples and which volumes will be collected and provide a rationale behind their selection. Provide information which samples will be used for HBM analysis.

Provide here information about which type of tubes will be used for sample collection.

Provide detailed protocol (SOP) for the collection and handling of all selected biological samples including possible centrifugation, aliquoting, instructions for sample storage on the field and for long term.

Provide sample transfer protocol(s) including how samples should be packed for transport, are the samples transferred from the field directly to the analysing laboratory or to a holding location, biobank etc., and if transport between laboratories is required how that should be organized.

If known, provide a list of health and HBM biomarkers planned to be analysed from the samples. Also provide the rationale for selection of those biomarkers, i.e. national interest.

Provide sample specific collection forms as an Annex to the protocol.

Specify the laboratories selected to perform the analysis of the samples. If applicable, provide details about the selection process.

If available, provide laboratory quality control and accreditation documents.

3.3.5 Examination sites and fieldwork personnel

Examination site

Describe here the type(s) of examination site(s) planned for the survey and the rationale behind their selection. If there were any national legislation or cultural norms affecting on decision, describe these as well.

If examinations/interviews are conducted at the home of the invitee, describe the issues to be considered. Can all the planned measurements be conducted at the home environment?

Fieldwork personnel

Describe the possible legal requirements, e.g. requirement of certified phlebotomist to draw blood samples, and cultural norms which may affect the selection of the survey staff in your country. Describe the composition of the fieldwork team and the number of teams needed for the survey.

3.3.6 Timing of the survey

Specify here the months and year when the survey is expected to be carried out. Estimate also the length of the fieldwork period.

If relevant, specify if the study period should cover all seasons and/or specific periods over a year. This will be taken into account in case of shifting the start date of the study due to unforeseen circumstances.

If corresponding surveys have been carried out in your country previously, specify also their periods and describe how the previous survey(s) and other national surveys affect the timing of this survey.

Provide information on which days of the week and which times of the day the survey is planned to be conducted.

If detailed time schedule for different study sites is already known, provide it as an Annex to the protocol.

3.4 Fieldwork phase

3.4.1 Recruitment of invitees

3.4.1.1 Recruitment protocol

Describe how selected persons (invitees) are contacted and how many attempts are made (by mail, telephone etc.) before deciding that the person is a non-participant or not possible to contact.

3.4.1.2 Material(s) used for recruitment

Describe what kind of recruitment material (information leaflets, information letters, post cards etc.) is used and provide them as an Annex to the protocol.

Is there a survey specific website or telephone hotline where a person can seek for additional information, when considering participation?

Describe planned promotion activities, use of social media, news, etc. directed to the participants and/or to the general public to raise the awareness of the survey and thereby, the participation in the survey.

3.4.1.3 Motivating invitees and use of incentives

Describe what methods are used to increase the overall interest in participation.

Describe what kinds of methods are used to motivate the invitees to participate. What kinds of incentives are used and if no incentives are used describe why not? Do the survey participants get their own results?

3.4.1.4 Scheduling of appointments

Describe how the appointment scheduling for interviews and examinations is done.

3.4.2 Fieldwork flow

Provide the information on how the fieldwork is organized, i.e. in which order modules such as interviews, measurements or sample collections are conducted, how long each module is expected to last and who is responsible for the administration of the module.

Provide the rationale for the order of the modules, i.e. blood pressure has to be measured before blood sample collection.

Estimate the duration of the interview and examination.

3.5 Quality assurance

3.5.1 Training of the personnel

Describe here the plans for the training programme.

- Which personnel groups need training and what kind of training is needed?
- Who are the trainers and what are their qualifications, professions and how many trainers are there?
- For how long will the training take, which issues are covered during the training and what kind of training methods are used?
- When is the training planned to be organized in relation to the fieldwork period?
- If you have already organized the training or will do so in near future, provide the training materials used. If training materials are not in English, provide a short summary of them in English for feasibility studies.
- If the training will not be carried out in the near future, list potential training material types which should be prepared.
- If the fieldwork takes a long time, over 6 months, describe if refreshing training sessions are planned to be organized and how.

3.5.2 Pilot study

Describe when the pilot study will be conducted in relation to actual survey. Is there enough time for changes in the survey protocol, if a need for it arises during the pilot study?

Describe the characteristics of the pilot study (how and where it will be conducted, the number of participants etc.).

3.5.3 Audit visits

Describe the plans regarding audit visits; will there be audit visits during the fieldwork phase, what aims of the audit visits are, and who will carry out the audit visits.

3.5.4 Quality assurance of questionnaire data

Describe how the questionnaire data is checked during the data collection on the field or after data entry at the central office. Indicate who is responsible for checking of the data.

3.5.5 Quality assurance of health measurements

Describe the internal quality control measures such as regular calibration of measurement devices and external quality assessment planned for the included health measurements.

If there are daily/weekly check lists for quality control, provide these as an Annex to the protocol.

Describe the measurement specific quality control procedures for the fieldwork phase.

Describe how the quality of generated data is monitored during the fieldwork i.e. checking of validity of blood pressure and anthropometric measurements based on generated data (see example EHES Manual, Part B, Section 5.1.1.10.3 Quality control by coordinating office during a fieldwork at http://urn.fi/URN:ISBN:978-952-302-701-5).

3.5.6 Quality assurance of sample collection and laboratory measurements

3.5.6.1 QA of sample collection

Describe the internal quality control measures and external quality assessment planned for sample collection.

Describe the quality control procedures for sample collection for the fieldwork phase.

Provide any daily/weekly quality control checklists as an Annex to the protocol.

3.5.6.2 QA of laboratory measurements

Describe the internal quality control measures and external quality control/assessment for laboratory measurements.

3.6 Data management

Describe here what kind of data management system is planned for the survey and how the data security is ensured on that.

Describe also the data back-up procedures.

Describe how the subject identification is handled in the survey and how data confidentiality is ensured on the field.

Describe how the data are transferred from the field to the central office and to the database.

Describe the different formats of data collection: are the data entered directly to a computer or first recorded on paper forms and entered to a computer later? Describe the quality assurance procedures for data collection.

Which software(s)/program(s) is/are used for data entry?

3.7 Dissemination, publicity and reporting

Provide the dissemination and publicity plans for the survey.

Describe the planned reports.

3.8 Budget

Calculate the survey budget in total (including also costs of the planning and preparation, and a fieldwork pilot, as well as basic reporting).

What are the potential or agreed sources of funding?

3.9 Annexes

Provide as an Annex to the study protocol following documents (whenever applicable/available):

1. Information leaflet/notice and informed consent form
2. Copy of the ethical approval
3. Copy of the data protection approval (if applicable)
4. Questionnaires including non-response questionnaire

5. interviewer manual (if applicable)
6. SOPs for selected health measurements (if available)
7. Forms for health measurement data collection
8. Forms for biological sample collection
9. Time schedule for different study sites (if available)
10. Daily/weekly check lists for quality control of health measurements
11. Laboratory quality control/accreditation documentation
12. Material used for recruitment of invitees