science and policy
for a healthy future

HBM4EU project

Cases

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1st HBM4EU Training School 2018

1. Overview

The participants will get a solid overview of requests related to HBM studies in EU and for the HBM4EU programme specifically. Critical issues of information, consent, feed-back of study results, data protection and forward of individual data to IPCHEM will be covered. ….

2. Strategy

The participants will actively contribute with own experiences/studies, solving cases and developing information and consent material.

Research ethics — *Code of conduct*

http://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf

- ***Reliability*** in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources.
- ***Honesty*** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.
- ***Respect*** for colleagues, research participants, society, ecosystems, cultural heritage and the environment.
- ***Accountability*** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

Research ethics

BOX 3: US OFFICE OF RESEARCH INTEGRITY DEFINITION OF RESEARCH MISCONDUCT

Research misconduct means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

(a) *Fabrication* is making up data or results and recording or reporting them.

(b) *Falsification* is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

(c) *Plagiarism* is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

Research misconduct does not include honest error or differences of opinion.

(Source: Office of Research Integrity, n.d.)

Research ethics

BOX 7: PRINCIPLES OF RESEARCH INTEGRITY IN THE DANISH CODE OF CONDUCT FOR RESEARCH INTEGRITY

Honesty

To ensure the trustworthiness of research, researchers should be honest when reporting objectives, methods, data, analysis, results, conclusions, etc.

This requires accurate and balanced reporting when:

- presenting and interpreting research
- making claims based on findings
- acknowledging the work of other researchers
- applying for research funding
- reviewing and evaluating research

Transparency

To ensure the credibility of scientific reasoning, and to ensure that academic reflection is consistent with practice in the relevant field of research, all phases of research should be transparent.

This requires openness when reporting:

- conflicts of interest
- planning of research
- research methods applied
- results and conclusions

Accountability

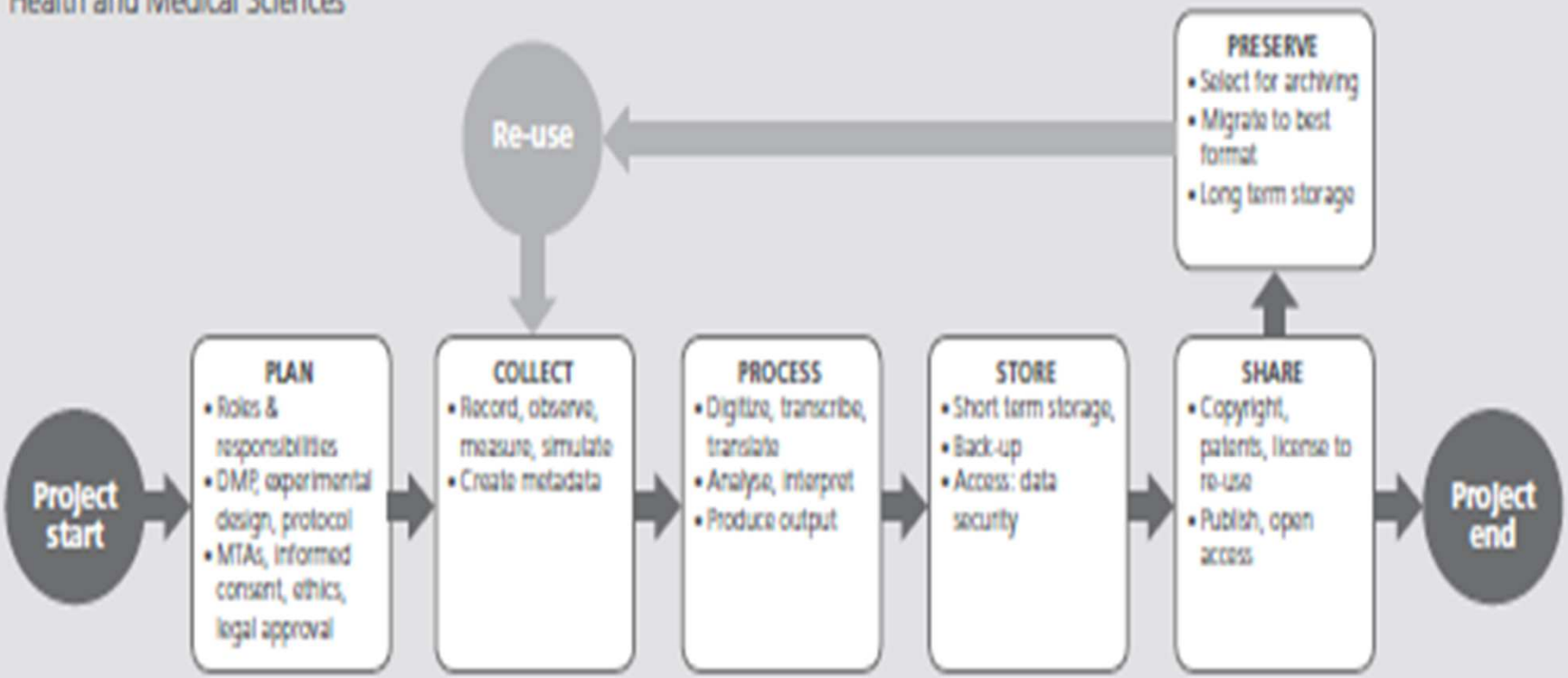
To ensure the reliability of research, all parties involved should be accountable for the research carried out.

This requires that researchers and institutions accept responsibility for the research they are conducting, in terms of:

- accuracy and reliability of research results
- adherence to all relevant regulations
- fostering and maintaining a culture of research integrity through teaching, training, and supervision
- taking appropriate measures when dealing with breaches of responsible conduct of research

Research ethics

FIGURE 1. THE RESEARCH DATA LIFECYCLE. The blocks represent the various phases in research data management and contain keywords appropriate for each phase. Illustration taken from the research data management policy of the Faculty of Health and Medical Sciences



Research ethics

BOX 2: SOME REQUIREMENTS THAT NEED TO BE SATISFIED BEFORE EMBARKING ON DATA COLLECTION

Research involving human beings and/or human materials:

1. Health research projects in Denmark involving human beings or any kind of human material (cells etc.) need permission from a *regional ethics committee*.
   See more on the website for the National Committee on Health Research Ethics (2017).
2. Research projects involving sensitive personal data may require permission from the *Danish Data Protection Agency (DDPA)*. This applies, for example, to social science projects outside the field of human health based on interviews, surveys and similar methods that typically do not require permission from a regional ethics committee. Application for permission proceeds via a single registration at each faculty involved. Even if no permission from the DDPA is required, researchers must comply with the requirements of the *Danish Act on Procession of Personal Data*.
   See more on the website for the Danish Data Protection Agency (2010).
3. In some countries (e.g. the UK and the US) all projects involving human subjects require permission from an *Institutional Review Board*. Such permissions may also be required by international funders and by journals. Therefore, the Faculty of Health and Medical Sciences and the Faculty of Science at the University of Copenhagen have set up a Review Board where researchers can ask to have their projects reviewed even if this is not required by Danish law.
4. Typically, it is a requirement for all projects involving human subjects that participants give their *informed consent* to the research. Part of the basis for the informed consent is the provision, to participants, of information on measures to protect their privacy.

Research involving other organisms:

5. Where laboratory animals are used, permission is required from the *Danish Animal Experiments Inspectorate*.
   See more on the website for the Danish Veterinary and Food Administration (2017).
6. Experiments involving the release of genetically modified organisms or other applications of advanced technology may also require permission.

Researchers engaging in international collaborations should be aware that requirements may vary across countries.

Research ethics

BOX 1: DEFINITIONS OF CONFLICT OF INTEREST

1) According to the Danish Code of Conduct for Research Integrity (Ministry of Higher Education and Science, 2014), a conflict of interest is "a situation in which financial or other interests have the potential to compromise or bias professional judgment." (p.15)
2) According to Thompson, writing in the *New England Journal of Medicine* in 1993, a conflict of interest is "a set of conditions in which professional judgment concerning a primary interest (such as patients' welfare or the validity of research) tends to be unduly influenced by a secondary interest (such as financial gain)." (p.573)
3) According to MacDonald et al., writing in the *Journal of Business Ethics* in 2002, "We can define a conflict of interest as a situation in which a person has a private or personal interest sufficient to appear to influence the objective exercise of his or her official duties as, say, a public official, an employee, or a professional" (p.68)

- Personal financial gain (e.g. increased salary; increased value of personal investments in companies related to the research)
- Professional financial gain (e.g. funding for current or future research projects)
- Alternative professional commitments (e.g. commitments to a spin-off company)
- Career interests (e.g. achieving tenure)
- Professional relations (e.g. supporting students' or collaborators' careers)
- Personal relations (e.g. helping a friend)
- Religious, moral or political commitments (e.g. honouring a religious position by avoiding stem cell research; suppressing data on climate change until after a key convention of a political party with a sceptical agenda)

Among the diverse array of conflicts of interest, *financial* conflicts of interest have received particular attention – they are considered highly likely to influence a scientist's actions. We therefore consider them in a little more detail here.

Research ethical issues

Protocol
Hypothesis
Validated method
Power of study
Informed consent
Data management
Data protection
Data sharing

Ethics

What is confidential information

Very sensitive information

Racial origin, political opinions, religious or other beliefs, health, sexual life, criminal convictions, trade union membership

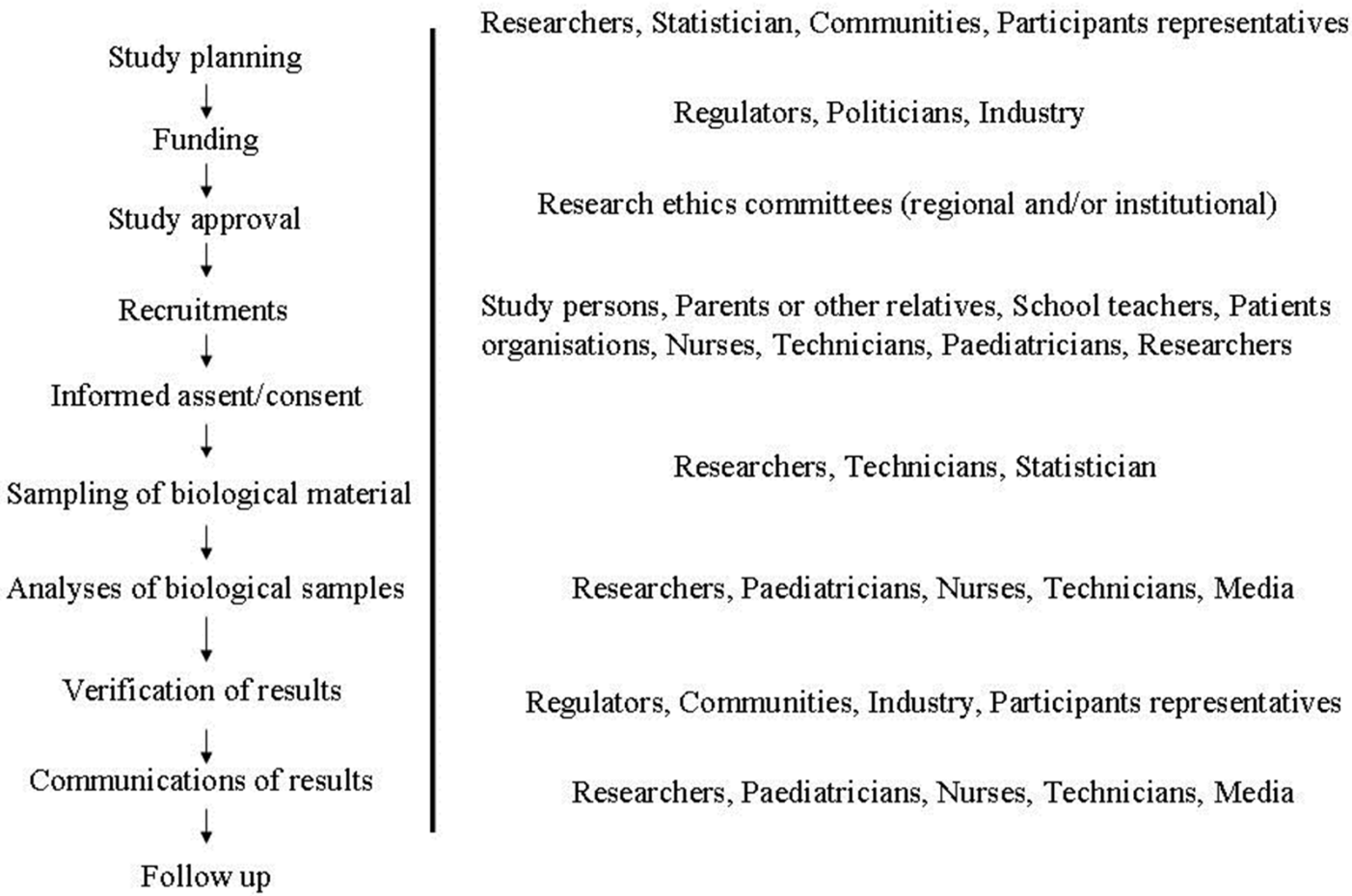
Less sensitive information

Personal finances, family relations, education, employment relations

Ordinary information

Gender, address, telephone number

Phases in study



Design

Ethics Review (study protocol approval-apply well in advance!)

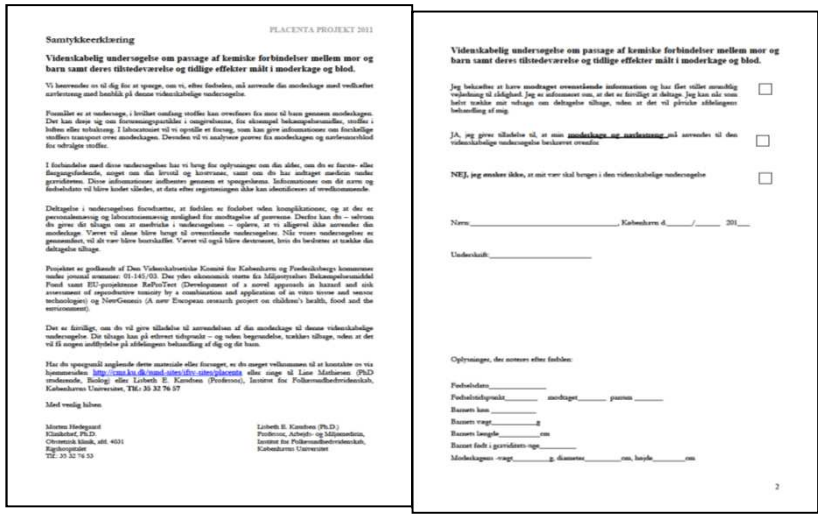
Reporting study to individual participants- publishing/releasing data

Respect the rights of study participants

Adverse discoveries

Confidentiality

Informed written Consent



Samtykkeerklæring

Videnskabelig undersøgelse om passage af kemiske forbindelser mellem mor og barn samt deres tilstedeværelse og tidlige effekter målt i moderkage og blod.

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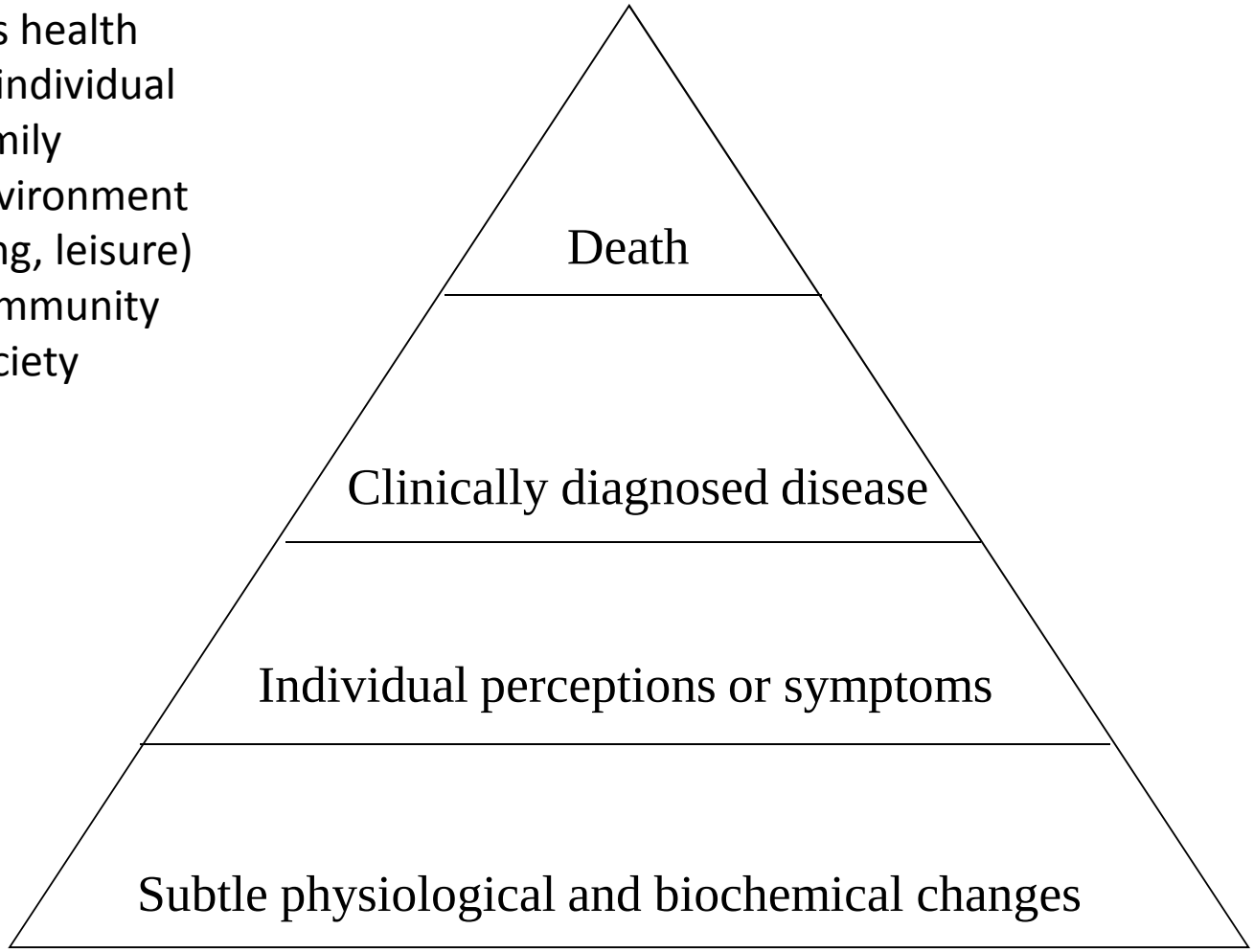
Box 8.1. Purposes of a study protocol

- helps the investigators focus on the critical issues to be addressed by the study;
- delineates objectives, hypotheses, study design, study populations, methods of measurement, ethical and legal issues, methods for data analysis, and anticipated results;
- helps to remind the researchers of the details of the study plan during the study;
- helps to maintain continuity should key investigators leave the study;
- documents the procedures of the project for future reference;
- provides material that can be used for external or peer review of the study;
- can be used as a source of information about the study.

Source: adapted from Miettinen (1985) and Hernberg (1992).

What is health
To the individual
The family
The environment
(working, leisure)
The community
The society



Design

Study protocol

A study protocol must be developed initially to any HBM activity including information as e.g. in the DEMOCOPHES study protocol with the outline shown:

BACKGROUND INFORMATION

- EUROPEAN ENVIRONMENT AND HEALTH ACTION PLAN
- COMMON EUROPEAN PILOT STUDY PROTOCOL
- NEED FOR FLEXIBILITY
- SUPPORT

STUDY OBJECTIVE

SUMMARY

MANAGEMENT OF THE STUDY

- AT NATIONAL LEVEL.
- AT EUROPEAN LEVEL

STUDY DESIGN

- REPRESENTATIVITY
- STUDY POPULATION

FIELD WORK

- ORGANIZATION AND INSTRUMENTS
- SCHEDULING OF FIELD WORK:
- PROCEDURE OF PARTICIPANT RECRUITMENT:
- THE ESSENTIAL FIELD INSTRUMENTS FOR THE PILOT STUDY
- QUESTIONNAIRES, INTERVIEWS AND DATA SHEETS
- QUALITY CONTROL MEASURES

BIOLOGICAL MATERIAL

- CHOICE OF AGENTS AND BIOMARKERS UNDER INVESTIGATION
- FOCUS ON STANDARDISATION
- PRE-ANALYTICAL PHASE
- ANALYTICAL PHASE
- REPARTITION OF TASKS
- POST ANALYTICAL PHASE

DATA MANAGEMENT, ANALYSIS AND EVALUATION

- DATA MANAGEMENT
- DATA EVALUATION

COMMUNICATION PLAN

- BASIC OPTIONS AND STRATEGY
- COMMUNICATION CAMPAIGNS
- COMMUNICATION MATERIAL
- WEBSITES

ETHICS AND DATA PROTECTION

- OVERALL APPROACH
- ETHICAL COMMITTEE AND DATA PROTECTION AUTHORITY

TRAINING AND SUPPORT

- GENERAL APPROACH

Measuring environmental exposure of children and their mothers in a European human biomonitoring survey: a feasibility study.

Study protocol for a European Human BioMonitoring (HBM) pilot study http://www.eu-hbm.info/cophes/download/common-european-pilot-study-protocol/view

Communication

BOX 4: CHECKLIST OF QUESTIONS FOR RESPONSIBLE RESEARCH COMMUNICATION

1) Reflect on your goals – why do you want to communicate, and what kind of relationship do you want to have with your audience? (see Section 5.1)
2) If you have a choice, which media will best match your goals? If you cannot choose which media to use, do you need to adjust your goals? (Section 5.2)
3) Which aspect(s) of research do you want to communicate about? (Section 5.3)
4) Within the constraints of your medium, what is your key message? How can you honestly and accurately describe the novelty, importance, certainty, statistics, practical applications and ethical or societal implications of your research? (Section 5.4)
5) Are there any requirements or restrictions (a) on what you communicate and (b) how you present your affiliation and expertise? (Section 5.5)

The right NOT to know:

Various ethical/legal instruments recognise this right, for instance the European Convention on Human Rights and Biomedicine and the UNESCO Universal Declaration onthe Human Genome and Human Rights.

Furthermore, in relation to genetic issues and unexpected findings, the Council of Europe has made a Recommendation[1], in which it is suggested that unexpected findings only shall be communicated to the person tested if they are of direct clinical importance to the person or the relatives. Moreover, it is stated that Communication of unexpected findings to family members shall only be authorised by national law if the person tested refuses expressly to inform them even though their lives are in danger.

The foundation and conditions for the exercise of the right NOT to know is uncertain in national laws. Some countries (fore example Denmark), recognise the right not to know as a legal right. Moreover, the Estonian Human Genes Research Act, which regulates the establishment of a gene bank (the Estonian Genome Project), expressly states that a gene donor has the right NOT to know his or her genetic data.

[1] No. R (92)3 Genetic Testing and Screening for Health Care Purposes

Table 17.4a. Ethical implications of testing for AAT deficiency before employment-

Stakeholder	Beneficence	Autonomy	Justice
Employee	Risk of false-positive result, diminishing life quality. In case of real positive, the benefit will consist in 28% avoiding disease due to non-exposure.	The applicant has to undergo the test if job is seriously wanted, thus no autonomy.	Since the predictive value is so low, this test is not justified as a general screening test.
Family	Depends on whether the applicant was truly positive. If an increase in life quality can result from change in life style, this will affect the family in a positive way.	No autonomy, as above.	
Employer	Since the predictive value is 28%, he will "save" on these, but will also erroneously deselect 72% potentially good workers.	Some employers may choose the screening programme, others will decline.	May take it as an alibi that the test is part of a programme approved by local authorities. But this is a false justification.
Colleagues	No effect.	No effect.	Not relevant
Society	As for employer.	Scientifically unjustified pressure may be put on applicants,	To be part of a legal programme the screening has to be justifiable.
Occupational-health practitioner	Marginally better knowledge of patient.	Puts the practitioner in a dilemma if the test is part of duties.	Sample has to be taken by doctor.
Testing laboratory	More tasks and data.	Not relevant.	Depends on legal situation.

Table 17.4b. Ethical implications of testing for AAT deficiency after respiratory symptoms.

Stakeholder	Beneficence	Autonomy	Justice
Employee	Step in finding aetiology of disease.	May be a voluntary offer.	Proposed and used in several countries for diagnosing patients.
Family	As above		
Employer	May identify generally harmful exposures.	May initiate action to diminish the exposures.	
Colleagues	More knowledge about who will have the symptoms.		
Society	Promotes prevention.		
Occupational-health practitioner	Greater knowledge about patient.		
Testing laboratory	More tasks and data.		

Policy paper

List of content

HBM4EU science and policy for a healthy future

HORIZON2020 Programme
Contract No. 733032 HBM4EU

Legal and Ethics Policy Paper

Update June 2018

Draft, Deliverable Report
D 1.5
WP 1 - Project Coordination and Management
Deadline
Upload by Coordinator: [ddmmyyyy]

Entity	Name of person responsible	Short name of institution	Received [Date]
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Grant Signatory	Ulla Brigitte Vogel	NRCWE	.2017
Pillar Leader	-	-	
Work Package Leader	Marike Kolossa-Gehring	UBA	.2017
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BOX 3: WHY SHARE DATA?

There are many reasons why research data should be shared with the wider research community whenever possible:

Impact on your research profile:

- It leads to new research collaborations.
- It increases the impact and visibility of research.
- It provides credit to the researcher.

Impact on the (scientific) community:

- It enhances scientific enquiry and debate.
- It enables innovation and new data uses.
- It increases the efficiency of research due to reusability.
- It provides a great resource for education and training.

Ethics:

- It encourages the improvement and validation of research methods.
- It enables scrutiny of research results.
- It facilitates transparency and accountability or research.

Compliance with requirements:

- It meets journal, institution, and/or funder requirements for data sharing.
- It meets standard practices within the research community.

Your case:

Study hypotheses

Ethics issue

How to handle

Lessons learned

UNIVERSITY OF COPENHAGEN

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Speaker's information

Lisbeth E. Knudsen.,MSc, PhD professor in animal free toxicology has worked with ethics and HBM since 1987 in designing, performing and reporting field studies. Appointed scientific member of the Regional ethics committee. The chair of the institutional ethics committee. Leader of Task 1.5 in HBM4EU: Ethics and data protection and partner in the Task 2.5 Training. National Hub contact point of Denmark

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