D 1.2

Set-up of a Data Management Plan

1st Reporting period
WP1 Management and Co-ordination

Responsible Partner: Imperial College
Contributing partners:

Due date of the deliverable: M6 (October 30th 2015)
Actual submission date: M6 (October 6th 2015)

Dissemination level: PU

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Document Management

PROJECT FULL TITLE	Life-course biological pathways underlying social differences in healthy ageing
PROJECT ACRONYM	LIFEPATH
	H2020-PHC-2014-2015/H2020-PHC-2014-two-stage
GRANT AGREEMENT	633666
STARTING DATE	01/05/2015
DURATION	48 months

D1.2 Set up of a Data Management Plan

Task:

Leader: Imperial College

History of changes:

Vn	**Status**	**Date**	**Organisation / Person responsible**	**Reason for Change**
V1	Draft	30/09/2015	Imperial/Vineis	First draft
V2	Draft			
Vf	Final			

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1. PRINCIPLES

Data management is under the responsibility of the coordinator and is planned in agreement with beneficiary 14, UNITO. It is regulated by bilateral DTAs (see below, item 6 and 7) and follows the Imperial College and UNITO rules for Data sharing, confidentiality and information governance (item 8).

2. GENERAL PLAN FOR DATA MANAGEMENT

The general scheme for data management has been agreed upon at the kick-off meeting (D1.1) and it includes:

- The transfer of cohort data from single partners to (a) UNITO (with the exclusion of biomarkers) and (b) Imperial College for biomarkers. Both institutions have rules for data sharing, confidentiality and information governance
- The harmonization of relevant variables from all cohorts, depending on the needs of the WP, in particular in preparation of data analysis for the "decline phase" (Working Group 1, led by Stringhini - item 4 below), of the "build-up" phase (Working Group 2, led by Layte - item 5 below) and of the existing biomarkers (Working Group 3, led by Vineis).
- Harmonized variables will be made available to Work packages and Working Groups on request on the basis of the planned statistical analyses, reports and papers.

3. DEFINITION OF AGEING AND HARMONIZATION OF SES

The **workshop of WP7** (held on June 10 2015) led to definitions/refinements of SES and healthy ageing that will be used in the consortium (a report is prepared separately by M Kelly-Irving in deliverable D7.1).

The following simplified definition of healthy ageing has been proposed as a starting point: "**life expectancy at age 65 without activity limitations**". We will use both hard indicators (death) and functional indicators (activity limitations), though whenever possible we will emphasize the second.

1. **Proposal for harmonization of adult SES variables (written by Fulvio Ricceri, Angelo d'Errico, Silvia Stringhini)**

EDUCATIONAL LEVEL:

Variable1 (3 levels) – *all cohorts*:

- primary or lower secondary school
- higher secondary school
- tertiary education (post-secondary)

Variable 2 (4 levels) – *not all cohorts*:

- primary or lower secondary school
- vocational school
- higher secondary school
- tertiary education (post-secondary)

EMPLOYMENT STATUS:

Variable 1 (2 levels) – *all cohorts*:

- employed
- not employed

Variable 2 (5 levels) – *not all cohorts*:

- employed
- not employed: retired
- not employed: housewife
- not employed: unemployed
- not employed: disabled

OCCUPATIONAL CLASS:

Variable 1 (5 levels) – *not all cohorts:*

- higher professionals and managers (Class 1 ESEC – European Socio-economic Classification – 9 classes)
- lower professionals and managers; higher clerical, services and sales workers (Class 2 and 3 ESEC)
- small employers and self-employed; farmers; lower supervisors and technicians (Class 4, 5, and 6 ESEC)
- lower clerical, services, and sales workers; skilled workers (Class 7 and 8 ESEC)
- semi – and unskilled workers (Class 9 ESEC)

INCOME

Variable 1 (3 levels):

- tertiles within each cohort

Variable 2 (4 levels) – *if possible*:

- quartiles within each cohort

Variable 3 (5 levels) – *if possible*:

- quintiles within each cohort

4. PROPOSAL FOR HARMONISED SOCIO-ECONOMIC MEASURES IN THE BUILD-UP PHASE (WRITTEN BY RICHARD LAYTE)

For both papers and for other work in the growth phase working group we will need to produce comparative data and this requires a harmonisation template that can be applied across all of the cohorts contributing data. Whilst the growth phase group could produce its own harmonisation guide, it makes sense, where possible, to adopt that being used by the decline phase working group. This will mean that should the same data be used in the different workgroups we will not be creating more work for ourselves. Earlier in the summer Silvia circulated an initial harmonisation guide for SES variables which I have attached here for reference. This sets out harmonised variables for education, income and social class and provides two/three levels of variable which can be adopted depending on the level of information available. This is important as data structures vary significantly across the cohorts and we will be forced to use the lowest common denominator if we are looking to maximise the number of countries in comparisons. Overall I think this is a good schema to use for the SES variables although there are some questions about how these schemas would be implemented in different countries and in different cohorts that I would like to explore.

Education Variables

For education for example, in Ireland or the UK there is no analogue to the 'vocational school' listed although I fully recognise that there is a differentiation between general and vocational tracks in other countries. In the CASMIN schema (see attached) which has been used for a great deal of social mobility research, there are higher and lower vocational qualifications which are essentially analogues of lower secondary and higher secondary educational qualifications. Should 'vocational school' by grouped with the latter in the LIFEPATH three level variable?

There are similar issues around how to classify 'tertiary education'. Many countries have post-secondary courses in vocational subjects but these would not be classed as tertiary education and indeed, do not lead to the advantage that a bachelor's degree would in the labour market. For example, nursing qualifications or technical apprenticeships. In the CASMIN schema these are classified as 2c_voc. Tertiary would usually include practically orientated study programs like college technical diplomas and professional qualifications like social workers.

A third issue is the amount of differentiation to be used depending on the age of the cohort under investigation. Because of educational expansion in most countries it is now quite rare to find a young person whose highest level of education is primary. I imagine this is the reason why Silva and colleagues have collapsed primary and lower secondary levels in their schema. Among older cohorts though (those prior to 1967 in Ireland), leaving school before secondary education was far more common and this track had significant impacts on life trajectory. This would suggest keeping these two levels separate among older cohorts.

Can I suggest that we adopt the following using the CASMIN groups attached?

- Primary Education - 1a, 1b, 1c
- Lower Secondary School - 2a, 2b ('Vocational School' should be grouped here if education finished <=16)
- Primary and lower secondary can be grouped in younger cohorts.

- Higher Secondary School – 2c_gen, 2c_voc ('Vocational School' should be grouped here if education finished >16 & <=18)
- Tertiary Education (3a, 3b).ù

Occupational Class

For the social (occupational) class variable Silva and colleagues have suggested that we use an aggregated version of the European Socio-Economic Classification (EsEC), a comparative schema created by David Rose based on the Erikson/Goldthorpe/Portacarero schema from the early 1990s. EsEC is also close to the ONS class scheme as used in the UK (which was also developed by David Rose). This I think is a good choice as it is a theoretically based schema that has proven to be a good predictor of outcomes (see https://irvapp.fbk.eu/sites/irvapp.fbk.eu/files/irvapp_seminar_2010_03_rose_harrison_slide.pdf). There are issues however in how teams are to allocate occupations to the groups set out in the Harmonisation document. For example, there is likely to be disagreement about which occupations are to be regarded as 'professionals' even within countries let alone across national borders and no clear way to define 'higher' and 'lower' professionals. It is likely then that there would be large discrepancies between the way different country teams would group particular occupations. The usual response in comparative research is to apply the International Standard Classification of Occupations (ISCO88, though there is now a more recent version) and then group these on an agreed basis. It looks from many of the submissions to Silvia that most studies do not ask for occupational titles but instead ask respondents to allocate themselves to a group at interview. In this situation we will have no choice but to apply a different coding in each case and agree this across the team. However, I think single occupation codes may be available in some cohorts and will check with individual teams by email.

If we are to combine existing occupation/class groups could I suggest that we adopt another aggregation of the EsEC classification that may lead to less cross-national drift in allocation. The standard EsEC has 10 levels:

- 'Large employers, higher mgrs/professionals' – (owners with 25+ employees, lawyers, doctors and judges plus corporate managers)
- 'Lower mgrs/professionals, higher supervisory/technicians' (secondary school teachers, academics, engineers, accountants)
- 'Intermediate occupations' (clerical and administrative occupations as well as associate professionals like social workers, primary school teachers, Montessori teachers, secretaries, etc).
- 'Small employers and self-employed (non-agriculture)' (shop keepers, self-employed artisans etc)
- 'Small employers and self-employed (agriculture)' (Small farmers)
- 'Lower supervisors and lower technician occupations' (supervisors of manual occupations and equipment operators)
- 'Lower sales, services and clerical ' (cashiers, cooks, firemen, police officers and salespeople)
- 'Lower technical' (skilled construction workers and other artisans)
- 'Routine Occupations' (unskilled manual labourers)
- Never worked and long-term unemployed

I would suggest that we keep the professional classes together as they are hard to differentiate and have outcomes which are quite similar anyway. The intermediate occupations are often female but these women tend to be married to men and have living standards like the skilled manuals and lower technical groups so I would argue that 3 should be grouped with 6. I would argue for keeping 4 and 5 separate as farmers vary hugely across countries in terms of income and outcomes. It would also be good to differentiate between skilled and unskilled manual occupations so I would suggest grouping 6, 7 and 8 and having 9 and 10 separate. This gives us:

1. Higher and lower professionals, large employers, higher technical and intermediate. (1 +2)
2. Smaller Employers and self-employed (non-agricultural) (4)
3. Smaller Employers and self-employed (agricultural) (5)
4. Manual supervisors, lower technical, sales and service plus intermediate). (3, 6, 7, 8)
5. Routine and never worked. (9+10).

Income Categories

Ideally, each team would have access to a measure of household net income that could be equivalised to take account of the number of people dependent on the income which would then be categorised into groups such as tertiles or quintiles. It looks from the documents circulated that many teams only have income categories so as with occupational class we will need to agree how these are grouped.

5. DATA TRANSFER AGREEMENT (FACSIMILE) BETWEEN EACH PARTNER (COHORTS) AND UNITO

DATA TRANSFER AGREEMENT

This Data Transfer Agreement ("Agreement") and the Memorandum of Understanding (the "MOU") included herein as Attachment 1 is between … (the "Provider") and those who are acquiring Data (as defined hereinafter), the Lifepath network and the University of Torino, Department of Clinical and Biological Sciences, Orbassano Italy (the "Recipient"), under this Agreement.

I. Definitions:

1. PROVIDER: Organization providing the DATA. The name and address of this party will be specified herein.

2. PROVIDER SCIENTIST: The name and address of this party will be specified herein.

3. RECIPIENT: Organization receiving the DATA. The name and address of this party will be specified herein.

4. RECIPIENT SCIENTIST: The name and address of this party will be specified herein.

5. DATA: Data collected by PROVIDER. It includes specified non-identifiable data on individuals, in electronic format.

6. MODIFICATIONS: New data generated as a result of the analyses of the DATA. New data are a result of the harmonization of Data collected from PROVIDERs

II. Terms and Conditions of this Agreement:

1. The PROVIDER retains ownership of the DATA, including any DATA contained or incorporated in MODIFICATIONS.

2. The PROVIDER and RECIPIENT will have joint ownership of MODIFICATIONS (except that, the PROVIDER retains ownership rights to the DATA included therein).

3. The PROVIDER will only transfer DATA to the RECIPIENT in good standing and if the RECIPIENT has been approved by the PROVIDER.

4. The PROVIDER, the RECIPIENT, and the RECIPIENT SCIENTIST agree that the DATA and MODIFICATIONS:

   (a) are to be used solely for the agreed academic research purposes, as specified in the attached MOU;

   (b) will not be used for other than the agreed purposes without the prior written consent of the PROVIDER;

   (c) are to be used only at the RECIPIENT organization, and in the RECIPIENT SCIENTIST's department under the direction of the RECIPIENT SCIENTIST or others

working under his/her direct supervision; and

(d) will not be transferred to anyone else within the RECIPIENT organization or external to the RECIPIENT organization without the prior written consent of the PROVIDER.

5. Any DATA delivered pursuant to this Agreement is understood to be a complete and accurate copy of the data retained by the PROVIDER.

6. This agreement shall not be interpreted to prevent or delay publication of research findings resulting from the use of the DATA or the MODIFICATIONS. The RECIPIENT SCIENTIST agrees to provide appropriate acknowledgement of the source of the DATA in all publications. See MOU for further information.

7. The RECIPIENT agrees to use the DATA in compliance with all applicable statutes and regulations, including those relating to research involving the use of humans.

8. This Agreement will terminate on the earliest of the following dates:

   (a) on completion of the proposed research with the DATA, as described in the MOU, or

   (b) on 1 month written notice by either party to the other, prior to completion of the project, provided that

   (i) if termination should occur under 8(a) above, the the RECIPIENT will discontinue its use of the DATA and will, upon direction of the PROVIDER, retain the DATA for a period of 7 years or destroy it. The RECIPIENT, at their discretion, will retain the MODIFICATIONS for a period of 7 years.

   (ii) in the event the PROVIDER terminates this Agreement under 8(b), the RECIPIENT will discontinue its use of the DATA upon the effective date of termination and will, upon direction of the PROVIDER, return or destroy all DATA and modify the MODIFICATIONS by removal of the PROVIDER data only.

9. The DATA is provided at no cost.

10. The Parties agree to abide by the terms of this Data Transfer Agreement and the MOU incorporated herein as Attachment 1. In the event of conflict between this Data Transfer Agreement and the MOU, the terms of the Data Transfer Agreement will prevail.

11. This Data Transfer Agreement along with the MOU included as Attachment 1 constitutes the entire agreement between the parties and supersedes all communications, arrangements and agreements, either written or oral, between the parties with respect to the matter hereof, except where otherwise required in law. This agreement may be varied by exchange of letters between the parties. No variation or extension to this Data Transfer Agreement or MOU shall be binding upon either party unless in writing and acknowledged and approved by both parties in writing.

(Signatures begin on the following page)

Acknowledged and agreed to:

For RECIPIENT

The Dept of Clinical and Biological Sciences, University of Torino, Orbassano, agrees to the details of the collaboration described herein.

_____

RECIPIENT SCIENTIST Signature Date, 26/06/2015

Name: Giuseppe Costa

Title: Professor

Address: Regione Gonzole n. 10, Orbassano (TO)

Phone: +39 0116705487

Fax: +39 0116705704

Email: giuseppe.costa@unito.it

For PROVIDER

… as the person responsible for the study from which the data is being provided agrees to the details of the collaboration outlined herein.

_____

Provider Scientist Signature Date

Name:

Title:

Address:

Phone:

Fax:

Email:

Attachment 1

6. MEMORANDUM OF UNDERSTANDING

1. Purpose

RECIPIENT and PROVIDER have agreed to collaborate on a pooled analysis project under the auspices of the Lifepath Consortium.

This Memorandum of Understanding (MOU) and the Data Transfer Agreement (DTA) describe the terms of the collaboration and the transfer of the data, including intellectual property rights, publication, confidentiality, other financial terms, and the specifics of the data and their transfer.

2. Study

The LIFEPATH project answers the call “PHC1. Understanding Health, ageing and disease: Determinants, risk factors and pathways; Scope Option (ii)”.

The specific and original objectives of LIFEPATH are:

a) To demonstrate that healthy ageing is strongly uneven in society, due to multiple environmental, behavioural and social circumstances that affect individuals’ life trajectories (text of the Scope of the Work Programme: “The identification of determinants and pathways characteristic of healthy and active ageing”). b) To improve the understanding of the mechanisms through which healthy ageing pathways diverge by social circumstances, by investigating life-course biological pathways using omic technologies. c) To provide evidence on the reversibility of the poorer ageing trajectories experienced by individuals exposed to the strongest adversities, by using an experimental approach ("conditional cash transfer" experiment for poverty reduction in New York City); and to analyse the health consequences of the current economic recession in Europe (i.e. changes in social and economic circumstances). d) To provide updated, relevant and innovative evidence for underpinning future policies.

The collaborative arrangements under this MOU and described below and will be carried out in accordance with the terms and conditions described therein. Neither party will deviate from the description of the project without an exchange of documents explaining, acknowledging and approving the deviation.

3. Contact information

RECIPIENT who will be receiving DATA shall advise in writing of any change in contact information. Upon receipt of DATA and MODIFICATIONS, the RECIPIENT will retain responsibility for the security of the data and the scientific rigour of any remaining statistical analyses to be performed.

4. Data

The DATA needed for project consists of SES and health data relevant to the Lifepath consortium.

The DATA will be labelled with a unique subject identification number that must be retained. The DATA will include documentation of the DATA including names of the columns and values of each of the levels within a column.

5. Data transfer

The PROVIDER will send the DATA in electronic format, via encrypted email or CD-ROM, to… .

6. Statistical analysis

Research will be conducted in accordance with the RECIPIENT Institutional Review Board. Additionally, the approval of the RECIPIENT Institution Review Board will be obtained prior to the receipt of any data.

The analyses that will be performed will be based on de-identified datasets and will include all the statistical analyses foreseen in the Lifepath DoA. Data will be used to test the study hypotheses and estimate associations using a variety of statistical techniques.

Any additional analyses must be proposed and agreed to in writing by all parties.

7. Publications

The Lifepath publication policy will be followed with respect to authorship on any manuscript resulting from this project.

The collaborators will ensure the timely dissemination of research findings.

7. DATA TRANSFER AGREEMENT (FACSIMILE) BETWEEN EACH PARTNER (COHORTS) AND IMPERIAL COLLEGE (BIOMARKER DATA)

DATA TRANSFER AGREEMENT

This Data Transfer Agreement ("AGREEMENT") is by and between

1) [name of providing institution] whose address is [address of supplying institution] (the "PROVIDER"); and
2) [name of receiving institution] whose address is [address of receiving institution] (the "RECIPIENT").

I. Definitions:

8. PROJECT: The Horizon 2020 multi-party project entitled "LIFEPATH: Lifecourse biological pathways underlying social differences in healthy ageing".

9. GRANT AGREEMENT: Grant Agreement No. 633666 for the Project which was signed by Provider and Recipient.

10. CONSORTIUM AGREEMENT: The Consortium Agreement for the Project which was signed by Provider and Recipient.

11. PROVIDER's SCIENTIST: [Name and institutional address of this individual] who is supplying the DATA.

12. RECIPIENT's SCIENTIST: [Name and institutional address of this individual] who is receiving the DATA.

13. DATA: Data collected by PROVIDER in electronic format which includes specified non-identifiable information on individuals. The PROVIDER's SCIENTIST will send the DATA to the RECIPIENT's SCIENTIST in electronic format via encrypted email or CD-ROM.

14. MODIFICATIONS: New data generated as a result of the analyses of the DATA either as a result of the harmonization of DATA collected from PROVIDER.

II. Terms and Conditions:

12. The PROVIDER retains ownership of the DATA including any DATA contained or incorporated in MODIFICATIONS.

13. The PROVIDER and RECIPIENT will have joint ownership of MODIFICATIONS except, as noted above, the PROVIDER retains ownership rights to the DATA contained or incorporated in any MODIFICATIONS.

14. The PROVIDER, the RECIPIENT, and the RECIPIENT's SCIENTIST agree that the DATA and MODIFICATIONS:
    (i) are to be used solely for the PROJECT as specified in the GRANT AGREEMENT's Annex 1;

(ii) will not be used for any other purpose without the prior written consent of the PROVIDER;

(iii) are to be used only at the RECIPIENT organization, and in the RECIPIENT SCIENTIST's department under the direction of the RECIPIENT's SCIENTIST or others working under his/her direct supervision; and

(iv) will not be transferred to anyone else within the RECIPIENT organization or external to the RECIPIENT organization without the prior written consent of the PROVIDER.

15. The RECIPIENT and the RECIPIENT's SCIENTIST shall acknowledge PROVIDER as the source of the DATA in any publication which mentions the DATA unless requested otherwise by the PROVIDER.

16. This AGREEMENT will terminate on the earliest of the following dates:
    (i) on completion of the proposed research with the DATA as described in the GRANT AGREEMENT's Annex 1, or
    (ii) on one (1) months' written notice by either party to the other prior to completion of the PROJECT, provided that
        1. if termination should occur under 5 (a) above, the RECIPIENT will discontinue its use of the DATA and will, upon direction of the PROVIDER, either retain the DATA for a period of 5 years or destroy it. The RECIPIENT, at their discretion, will retain the MODIFICATIONS for a period of 5 years.
        2. in the event the PROVIDER terminates this Agreement under 5 (b), the RECIPIENT will discontinue its use of the DATA upon the effective date of termination and will, upon direction of the PROVIDER, return or destroy all DATA and modify the MODIFICATIONS by removal of the PROVIDER data only.

17. The DATA is provided at no cost.

18. The DATA will be labelled with a unique subject identification number that must be retained. The DATA will include documentation of the DATA including names of the columns and values of each of the levels within a column.

19. The parties agree to abide by the terms of this AGREEMENT, the GRANT AGREEMENT and the CONSORTIUM AGREEMENT.

20. This AGREEMENT along with the GRANT AGREEMENT and CONSORTIUM AGREEMENT constitutes the entire agreement between the parties. This agreement may be varied by exchange of letters between the parties. No variation or extension to this AGREEMENT shall be binding upon either party unless in writing and acknowledged and approved by authorised signatories of both parties.

21. This AGREEMENT may be executed in two or more counterparts, each of which will be deemed an original, but all of which together shall constitute one and the same AGREEMENT. The PROVIDER and RECIPIENT acknowledge that an original signature or a copy thereof transmitted by PDF shall constitute an original signature for the purposes of this AGREEMENT.

(Signatures begin on the following page)

AGREED by the PROVIDER and RECIPIENT through their authorised signatories:-

*For and on behalf of the **PROVIDER***	*For and on behalf of the **RECIPIENT***
Signed:	Signed:
Name:	Name:
Title:	Title:
Date:	Date:

*Acknowledged and understood by the **PROVIDER's SCIENTIST***	*Acknowledged and understood by the **RECIPIENT's SCIENTIST***
Signed:	Signed:
Date:	Date:

8. DATA SHARING, CONFIDENTIALITY AND INFORMATION GOVERNANCE: IMPERIAL COLLEGE AND UNITO

Data sharing will be governed by multilateral Data Transfer Agreements (template attached). The MRC-PHE Centre for Environment and Health at Imperial College, where Lifepath is coordinated, has a strict policy on ethics, data management and confidentiality (attached). Any studies initiated from within the Centre are subject to national/international ethical review procedures. As part of the Centre's research, considerable quantities of data on individuals are held and analysed. In doing so the Centre complies with the **Data Protection Act 1998 (UK)** and processes that information in accordance with the eight Data Protection Principles set out in the Act. The Centre's staff includes the Data Protection Coordinator for the School of Public Health who is responsible for maintaining a register of datasets and advising on compliance. All PIs in the Centre have to undergo "information governance training" and obtain a certificate. All data, whether held electronically or manually, are securely stored. These rules apply to all partners in Lifepath. In addition, all Lifepath data will be stored at the **Unito Center** (University of Torino) after anonymization.

IT Policies – UNITO

The following IT policies apply to data generated within the Lifepath action and stored on the UNITO-Epi computer infrastructure. Giuseppe Costa, Angelo d'Errico, and a to be defined person, have user accounts with extended rights on the UNITO-Epi server and will need to obtain user accounts with extended rights on the FTPS server at Imperial College for standard use and data management purposes.

Logical User Access Rights and Identity Management
Each person who has access to the UNITO-Epi server has a unique username and login credentials to access the server. This information is managed by Microsoft Active Directory. Non-IT personnel are limited to their own login and do not have administrative access to the server. Password requirements are implemented and each user must change his/her password regularly. Failure to do so results in lockout from the network. All administrative tasks (access rights, account revocation, etc.) are performed by UNITO-Epi's IT department. Periodic review of logical access rights is done to ensure that the rights are enforced over time.

Network Security (WAN/LAN)

The UNITO-Epi network is separated into two distinct segments: internal (non-public) and external (Regional public administration network: Rupar). The external network is composed of fiber channel access to Rupar network. Only computers of the UNITO-Epi network have the ability to connect to the external network No personal device can connect to the external network. Both networks (internal & external) are protected by redundant firewalls. Internal switches and routers are inaccessible by regular users, are password-protected and can only be managed internally by IT personnel. Periodic review of firewall logs is performed. No remote desktop access is allowed. Administrator/Root passwords are changed on a periodic basis and are randomly generated consisting of a minimum length, special and alphanumeric characters.

UNITO-Epi internal IT Acceptable Use Policy
Every UNITO-Epi employee has signed the internal IT Policy document ensuring data security and protection for the company and its business partners. In this document, the following activities are rated as strictly prohibited, with no exceptions:

- "Revealing your account password to others or allowing use of your account by others."

- "Circumventing user authentication or security of any host, network or account."
- "Distributing information deemed confidential by or under any agreement with UNITO-Epi or any agreement between UNITO-Epi and any other party."

Backup and Disaster Recovery

Three areas of concern in a disaster are data integrity, hardware availability and physical infrastructure status. In the case of data integrity, data on the server is tape-backed up once a month with incremental backups nightly. Moreover, on the UNITO-Epi server is enabled daily the "shadow copy" service. Tape backups are off-site in secure, fireproof locations. Server restoration is possible and periodic testing of system restores including data recovery is performed to ensure hardware and data integrity. The server is under service contract with an external company for its lifespan. A comprehensive impact analysis and risk assessment has been performed.

Data Exchange

Typically customers of UNITO-Epi provide their data to us in one of the following ways:

- Via secure HTTP (HTTPS) server
- Via secure FTP (FTPS) server
- Hand-delivered in person

In all cases, the data is only handled by IT-personnel or the Project IT Policies.