P3G Meeting Montreal May 20 and 21, 2007

IWG1: International Working Group on social, environmental and biochemical investigations

Summary of the IWG1-session on May 10.

Chair: Erich Wichmann

The agenda of the session covered reports on the status of four ongoing activities:

1. DNA quantity and quality control - DNA harmonization Project
2. Electronic manual - Compilation of SOPs of important biobanking methods
3. Generic biochemical data set needed?
4. International controls

Furthermore, the role of disease-oriented biobanks in p3g was discussed.

1. DNA quantity and quality control – Q2C (Bill Ollier)

First phase (pilot) finished

- 13 labs participated
- Greater consistency between labs using similar measurement methods
- Implementation of most dilution protocols resulted in over-dilution
- Repetition of this experiment and changes to protocols required
- Need for an absolute DNA standard identified
- Manuscript in preparation

Second phase planned

- 30 labs interested
- SOP for the labs will be provided in advance
- the protocol will be simplified
- also PCR analyses will be performed to test DNA quality

Overall concept for future activities

- Group: Bill Ollier, Martin Yuille, Jay Brown, Aarno Pelotie, Thomas Illig, Gunnel, Ann-Christine Syränen (Uppsala), Decode?
- QC activity once a year
- Problems to be addressed:
  - DNA normalisation,
  - DNA quality,
  - DNA extraction,
  - length of DNA fragments,
  - sex test,
  - DNA from saliva,

- whole genome amplification,
- cell lines as source for DNA,
- requirements for gene expression

2. Electronic manual (Bill Ollier)

It was decided to collate SOPs or SARPs (standard actions and recommended procedures) for DNA extraction, storage, DNA quantitation and normalisation DNA measurement protocols via p3g from

- Q2C collaborators and
- all biobanks in the observatory

3. Generic biochemical data set (BDS) needed? (Erich Wichmann)

The question had been asked whether or not the Generic Data Set as discussed in Edinburgh should be complemented by a biochemical data set. The answer clearly was “yes”. The BDS should have the following structure:

- Essential BDS: Small set of 6-7 lab parameters (examples from MONICA, Genomeutwin, Cartagene)
- Extended, Optional BDS: to be defined later
- Characterization of blood withdrawal (fasting, in the morning, …)
- Characterization of confounders (medication, exercise, …)
- QC in available data (distribution within center, comparison to lab standard, participated in QC protocol)
- QC for new data: consider requirements of novel analysis tools and platforms - from preparation of the sample to storage, retrieval and transfer
- Environmental biomarkers (optional)
- Subgroup of IWG1 to support the Observatory for BDS

4. International „controls“ (Erich Wichmann)

Aims:

- To make „controls“ from different ethnic background available for genome-wide association studies
- To be independent of companies
- To provide methodological assistance for users
- To raise money for further „control“ samples from underrepresented ethnicities

Realisation:

- Prototype realized: access to 1644 Affy 500k gentypes from KORA population is possible
- Further Genome-wide data sets via ENGAGE (if funded)

- Ethnicity via „genetic fingerprint“? Only for QC of answers from questionnaire, to identify outliers

It was suggested to replace term „controls“ by „population samples“

Discussion: Role of disease-oriented biobanks in p3g (Erich Wichmann)

An overview on activities within the European initiative on Biobanking and Bio-Molecular Research Infrastructure (EU-BBMRI) was given.

Consequences for p3g:

- Disease endpoints mainly via prospective studies
- disease biobanks: only large, well organized biobanks of several diseases with high quality standards, national “hubs” should be included in p3g
- No small clinical sample collections

Summary of the common session of IWG1 and IW4 on May 21.

Chairs: Erich Wichmann and Julian Little

- presentation and discussion of the issues from the separate sessions of IWG1 and IWG4
- The general wish was that at future meetings there should be more room for common sessions of IWG1, IWG2 and IWG4.

Erich Wichmann, June 15, 2007